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# Animal Welfare Information Center

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## CONGRESS IN SESSION

- **S. 1557 To end the use of steel jaw leghold traps on animals in the United States.**

Introduced November 13, 1997, by Robert Torricelli (D-New Jersey) and referred to the Committee on Environment and Public Works.

It is the policy of the United States to end the needless maiming and suffering inflicted upon animals through the use of steel jaw leghold traps by prohibiting the import or export of, and the shipment in interstate commerce of, such traps and of articles of fur from animals that were trapped in such traps.

It is unlawful for any person knowingly: (1) to import, export, ship, or receive in interstate commerce an article of fur if any part of the article of fur is derived from an animal that was

*(Legislation cont'd p. 21)*

## Handling of Crippled and Nonambulatory Livestock

by

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### Introduction

Livestock handling practices have improved over the past several years. For example, a survey by Grandin (1990) indicated that during the last 15 years, the incidence of rough handling at feedlots and packing plants has decreased. Unfortunately, handling of downer and crippled nonambulatory livestock still needs improvement. Although there is an economic incentive to handle most livestock in a humane manner, no such incentive exists for nonambulatory animals. Crippled animals that are unable to walk represent a very small percentage of the total livestock handled, but these animals often suffer greatly.

### Discussion

#### Crippled Downer Cattle

From a humane standpoint, crippled nonambulatory cattle on the farm and at livestock markets are a serious problem. Their large size sometimes makes moving them in a humane manner almost impossible. The emphasis should be on **preventing** downers and cripples. A high percentage of crippled, downed cattle are old dairy cows, which are often very emaciated and weak; few have broken legs. Many of these dairy cows could have been prevented from becoming downers if they had been transported to market or slaughter before becoming too weak to

walk. The National Nonfed Beef Quality Audit (1994) conducted in 21 cow and bull slaughter plants indicated that 0.9 percent of the cull beef cows and 1.3 percent of cull dairy cows were disabled and unable to walk. Severely lame cattle were 3.4 percent of the beef cows and 5.8 percent of the dairy cattle. These animals were all in poor condition before they left the farm.

About 5 percent of dairies are responsible for 95 percent of this problem. These dairies should be identified and should receive the training necessary for improved handling procedures. In 1985, Grandin surveyed 51 auction markets and observed downer cows in 4 (8 percent) of the markets.

Overall, packing plants have improved their animal handling practices, but handling of cripples and downers is still a problem area. In a national study, Grandin visited 27 major hog and cattle packing plants and observed that 5 plants mistreated nonambulatory livestock. The most common handling problem at these plants was dragging conscious downers. These animals should have been stunned before dragging. These dragging incidents are a violation of the Humane Methods of Slaughter Act of 1978, because they occurred after the livestock had been unloaded at the packing plant. This act, which applies only to livestock that are on the premises of a USDA-inspected packing plant, requires use of humane handling and stunning methods.

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The regulations state, "The dragging of disabled animals and other animals unable to move, while conscious, is prohibited. Stunned animals may, however, be dragged" (9 CFR) (*Ed. note: See box on this page for the complete text of the handling of livestock regulations*). Many USDA inspectors permit dragging conscious animals off trucks parked on the packing plant premises, because it is unclear whether the inside of the vehicle is within the inspector's jurisdiction. The USDA has proposed an amendment to its regulations to allow inspectors to conduct ante-mortem inspection of downed animals on the truck. The animals could then be stunned on the truck before unloading.

### Farm Management To Prevent Downed Cattle

Discussions with successful producers indicate that good management practices can prevent 8 out of 10 dairy cow downers. Marginal operators may be responsible for many of the emaciated downers that are too weak to walk. To reduce the incidence of downer cattle:

1. Educate dairy and beef producers on the proper use of calf pullers to help prevent calving paralysis.
2. Educate producers that a heifer or cow with small pelvic size should be bred to a bull that will produce a small calf, minimizing calving difficulties. Producers should use ease-of-calving performance information when selecting replacement and herd sires.
3. Educate producers about proper nutrition. Some downers are caused by milk fever. High-producing dairy cows may require the services of a professional nutritionist to formulate diets for gestation and lactation periods. Prompt treatment of milk fever will save the cows.
4. Practice good sanitation and milking practices to help prevent mastitis.
5. Keep hooves trimmed on dairy cows to prevent foot problems and potential falls.

6. Roughen smooth floors with a grooving machine or saw to provide nonslip footing. Install nonslip flooring in new facilities.
7. Handle cattle gently to prevent injuries and falls.
8. Follow recommended loading densities for trucks.

### Methods for Moving Downer Cows

Use of a wide conveyer belt is one way to move downed cows. Three-foot-



wide conveyer belting can often be obtained from mines inexpensively. The cow can be rolled onto the belt, and the belt can then be moved with a tractor. Harnesses are also available for lifting downer cows. The use of a harness requires ceiling space for a forklift or a lifting loader.

Dragging cattle by their legs or neck is cruel and should be avoided. Double-deck semi-trailers that regularly haul old dairy cows should have a side door in the belly compartment so

downer cows can be rolled out the door instead of being dragged up the rear ramp. If a larger loader is available, a cow can be rolled into the bucket. If a cow goes down in the belly compartment of a semi-trailer that does not have side doors, humane removal is impossible; euthanasia is strongly recommended.

### Calf Handling and Marketing Problems

Handling of newborn dairy calves at livestock markets may be a serious problem and is easily corrected. The Code of Practice of the Welfare of Animals in Livestock Markets (1990) in England and Canada does not permit the sale of calves under one week of age. In the province of Alberta, all calves arriving at a livestock market must be inspected by a veterinarian. Calves cannot be sold unless they can walk and stand without assistance. The hair coat and the navel must be dry. A similar practice should be adopted in the United States. Day-old calves that may be unable to walk should not be brought to an auction market (Grandin 1990a).

A survey of nine New York livestock markets, conducted by the Humane Society of the United States in 1989, indicated that large numbers of dairy calves were being thrown from vehicles and dragged during handling. Overall, an average of 7 percent of the calves were thrown. The incidence at the two worst livestock markets was 25 percent; at two livestock markets, no calves were thrown. Thirty-one per-

cent of the calves marketed were under-age wet calves. Of the nine markets surveyed, the livestock market with the lowest percentage of wet calves had 15 percent, while the livestock market with the highest percentage had 50 percent.

Dairy producers need to improve their marketing management and reduce calf abuse during unloading. Some dairy producers have thrown calves off their

*Livestock cont'd on p.12*

# Animal Welfare Issues: Dairy

by

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## Introduction

In 1980, the Humane Society of the United States (HSUS) developed a grading system of farm animal products for “conscientious omnivores.” It categorized dairy products as acceptable, stating that “dairy cattle are the least intensively raised and confined of all farm animals” (49).

About 2 years later, M. Fox (36) of HSUS listed several concerns about the welfare of dairy animals. He cited the major issue as “reduction of quality and quantity of individual attention” in larger herds. The other welfare issues were:

- transportation of injured and sick animals to slaughter
- dehorning of calves with caustic chemicals, with or without anesthetic
- prolonged stanchion tying of cows, especially without exercise
- need for separation of cow and calf
- neglect of unwanted bull calves
- raising replacements in individual hutches rather than in groups
- confinement of veal calves in small crates (this issue is addressed in another discussion paper)
- failure to use welfare-related research knowledge
- production-related susceptibility to disease and metabolic disorders.

Similar concerns were expressed during a meeting of the Livestock Conservation Institute, reported by N. Black (17). Castration was an additional concern.

Many animal rights activists and others have also identified the following issues or concerns:

- The separation of cow and calf at birth (24,45,46,81). “One of the saddest and most pathetic of farm practices . . . is the separation of the calf from the cow at birth or soon after (46).” The “dairy operator generally has no use for the newborn calf” (24).
- The cow is continually pregnant and carries large quantities of milk (calf suckles 20 times per day in nature) (24,45).
- Cows maintained in good health should be capable of living 15 to 25 years (24,71).
- Because drugs are a regular feed additive, they are used to maintain health, and antibiotics are substitutes for good management (38,46). The cow is “so tense, nervous, and hyperactive that she often has to be given tranquilizers” (71).
- Thousands of family farmers have been forced out of business by large factory farms, where cruelty is an integral part of animal management, in order to maximize efficiency (36). (See also 24,45,47.)

- New technologies are harmful to animal welfare. Supercows may be forced to produce up to 80 calves a year through embryo transfer. Surrogate cows sometimes have difficult births as the implanted calf is larger than one she would naturally bear” (24). The overworked cow may be further stressed by daily injections of bovine somatotropin to increase milk yield (79,81).
- Environmental issues — Methane gas production; odor; loss of nonrenewable resources; depletion of aquifers from raising crops to feed livestock (38,87).

## Discussion

The issues raised by M. Fox (36) provide a good framework for looking at current practices and alternatives in the dairy industry.

### Reduction in the Quality and Quantity of Individual Attention

In 1979, there were about 11 million cows on 352,000 dairy farms, an average herd size of 30 cows (27). In 1989, there were 10.1 million cows on 205,000 dairy farms, an average of 49 cows per herd (90). Forty-six percent of U.S. cows were enrolled in a testing program, and the average size of these herds was 83 cows (60). In New York State, annual labor per cow decreased from 91 hours in 1956 to 50 hours in 1978 (66). Milk yield per cow increased from 5,842 to 11,239 pounds (2,650 to 5,098 Kg) during this period in the United States. Cost of labor per cow averaged \$114 (or about 23 hours per cow) in Virginia DHI herds in 1989 (97). These trends were the result of increased mechanization, especially in forage and waste handling, improved milking parlor design, computerized rations and feeding systems, and continued genetic increase.

Management practices have not reduced the quality of cow care; for example, an evaluation of management on southern dairy farms showed that milk yield per cow improved as farmers used more of the recommended management factors (22). “A typical dairy farmer using all the management practices had a larger herd producing above the average, was younger than average, was in a farm partnership, and had a college education” (22). Herds with excellent mastitis control had larger milking parlors and greater efficiency (cows milked/man/hour) than herds with fair mastitis control (35). Mechanism and automation have allowed dairy producers to pay more attention to management practices such as teat dipping (pre- and post-milking) and dry cow therapy for mastitis control (effectively reducing mastitis to about 7 percent of quarters (63)).

## Transportation of Injured and Sick Animals to Slaughter

Even though practically all dairy animals are transported sometime during their life (95 percent by truck (2)), relatively little legislation (Animal Transportation Act 1906, 28-hour law (Public Law #340)) or research has addressed the effects of transportation. When Jersey bull calves were transported, they had greater heart rates when they were free to move about than when they were confined to wood crates (83). Beef heifers that were crowded during transit had heart rates that were 4 to 7 percent lower than heifers that were provided with ample space (30); however, carcass bruising increased with stocking density changes from low ( $3\text{m}^2/\text{head}$ ) to high  $1\text{m}^2/\text{head}$ .

Additional physiological and behavioral studies involving calves indicate that transportation adversely affects welfare (86). Reducing time in transit, providing feed and water, avoiding extremes in weather, avoiding both weaning and vaccinating immediately before travel, avoiding exposure to unfamiliar animals, and same sex grouping during shipping should prevent or alleviate some stress (21). Injured or sick animals are particularly at risk in transit. An estimated 75 to 80 percent of the nonambulatory animals arriving at stockyards are large dairy animals. Nonambulatory cattle accounted for 0.1 percent of the cattle received at United Stockyards (S. St. Paul, Sioux Falls, Sioux City, Omaha, St. Joseph, Indianapolis, and Milwaukee) but these stockyards will no longer accept nonambulatory cattle (7).

## Dehorning, Castration, Identification

Dehorning is a generally recommended practice that reduces injuries to both animals and handlers, bruising during transport, and aggressive behavior in grouped cattle (85). Use of a commercial electric iron for dehorning of calves under 30 days of age is the most popular method (15), and presents no long-term stress (55). Caustic potash works well on calves from 1 to 3 weeks old, but it must be applied carefully. A dehorning tube may be used on calves up to 45 days of age. Saws, dehorning clippers, and Barnes dehorners are commonly used to dehorn older cattle (31). Calves ages 7 to 16 weeks apparently did not benefit from a lidocaine block before dehorning (18). A veterinarian should anesthetize the base of the horn before dehorning adult animals. In one study, adult cattle (18 to 22-month-old heifers) dehorned using either electro-immobilization, a local anesthetic, or no anesthetic were compared to a control (non-dehorned) group. Serum cortisol levels rose significantly in dehorned heifers, but there were no significant differences by type of dehorning (23).

Castration is used to control aggression (39, 42), reduce injury, increase growth efficiency and increase market price at slaughter (19). The most common methods of castration are surgical (cutting about 1 cm away from the bottom of the scrotum, gripping the testicle, and removing it with a quick jerk), emasculator (the spermatic cord is severed without breaking the skin), and elastrator (applying a rubber band above testes, stopping blood flow to the testes) (16). Surgical castration causes less pain than the latter two methods (74). Breaking rather than cutting the cord during surgical castration causes the lumen to close and prevents bleeding. Calves are usually castrated when they are dehorned before 45 days of age. Males exhibit fewer and less intense secondary sexual characteristics, including aggressive behavior, after they are castrated. Animal

welfarists criticize the failure to administer anesthesia during castration, but as Friend (42) points out, "not using anesthetics for those relatively simple procedures greatly reduces the complications caused by the anesthetics," such as, bloating and longer restraint with resulting stress. Injecting a lactic acid solution into the testes is an alternative method. In one experiment, 40 calves chemically castrated had less scrotal edema and gained more weight to 28 days, but weaning weight and 196-day weights were not different from surgically castrated calves (48). Cohen et al. (25) concluded that surgical castration caused greater stress than chemical castration. Over a 133-day period, there were no differences in the average daily gain of intact and castrated calves, but average daily gain of chemically castrated calves exceeded that of surgically castrated calves.

Dairy animals must be permanently identified for production, health, and registration records. Metal and plastic ear tags, tattoos, and hide brands are commonly used. Animal rights activists have strongly criticized use of hot hide face branding during the whole-herd buy-out program. Hot branding is a prohibited operation under provisions of the UK Welfare of Livestock Regulations (33). Freeze branding is less painful than hot branding and produces little hide damage, although it is visible at a distance (57, 59). Implanting a transponder just under the skin is the latest type of permanent identification. Destion/IDI markets more than 2.5 million transponders annually worldwide (5).

## Prolonged Stanchion Tying of Cows, Especially Without Exercise

Stanchion or tie-stall housing protects cows from weather extremes, predators, and disease; lets dairymen provide more individual care; and is a location for milking. About 60 percent of dairy farms are located in the Great Lakes and Northeastern States, of which about 70 percent have stanchion barns (51). Stanchion and tie-stall barns made up 56 percent of U.S. dairy housing in 1958 (70); this proportion decreased to 29 percent by 1975 (51). The increasing popularity of the free stall, which was invented in 1960 (2), has contributed to the decline in stanchion housing. Free stalls save labor and bedding and are more suited to larger herds than tie stalls. Cows in free stalls may exercise at will. Most dairy operators turn cows out of stanchion barns one or more times daily for milking, to allow the cows to exercise and to observe the animals for estrus (92). Cows in loose housing on deep litter rested longer than cows in free stalls or tie stalls, as did cows provided with a larger resting area, which also reduced aggression. Slatted floors in loose or free-stall housing may be used to conserve bedding and eliminate frequent manure handling. Urine and sloppy manure are immediately removed. Performance suffers, however, and cows can be injured if units are poorly designed (12,75,94). Waffle slats offer surer footing and stay cleaner (29). Cows in comfort stalls, which are longer and wider than tie stalls, spent more time lying (10.2 hours) than did cows in tie stalls (8.8 hours) (70). Dry cows and heifers spent 8.9 hours per day lying (11); lactating cows in free stalls spent 11.3 hours per day lying. Two-year-old cows in tie stalls and mature cows in free stalls spent similar amounts of time lying (65). Cows need 10 to 12 hours of resting time in each 24 hours (94). A tie stall on wheels, the Unicar, was an experimental housing, milking, and manage-

ment system (20,71,81) that was never used in the United States and was used only experimentally in Europe.

### **Tail Docking**

An emerging issue in the United States is the docking of cows' tails. The practice has been limited primarily to cows milked in rotary and parallel parlors to prevent disease, improve hygiene, and enhance ease of milking from the rear (50). The practice originated in New Zealand to keep dirty tails from impeding the milking process for pastured animals milked in rotary parlors (1). The general effects of this procedure on the cow's well-being and behavior need to be studied.

### **Pasturing**

Pasturing would supposedly reduce stocking density, environmental pollution (waste disposal, undesirable odors), and energy costs, and would permit housing to be used for shorter periods (87). Many dairy managers continue to pasture dry cows and heifers, but the trend is toward dry-lot management of the milking herd. Rollin (72) noted that legislation in Sweden that granted cattle the right to graze indicates that "U.S. society will soon demand that agriculture back off, at least to some extent, from confinement and pay greater attention to agricultural animal comfort and happiness."

Pasturing has its problems, however, and may not be as ideal as animal rights activists perceive. Weather limits the grazing season (150 days or less) in several northern States. Pasture will not supply the nutrients needed to maintain high milk yield, because it is difficult to provide forage of uniform quality and quantity. Shade and water, heat, insects, susceptibility to bloat, energy expended in grazing and travel to the milking parlor, and toxicity from soil are other considerations associated with pasturing. For example, high-producing cows spent much less time lying down and significantly more time grazing at all stages of the grazing season (10).

### **Separation of Cow and Calf**

Calves have little circulating antibody at birth and need colostrum to provide passive immunity (67). There is no consensus on how to provide colostrum: the calf can nurse the cow for 4 days (31); after initial nursing or hand-feeding, the cow and calf can be separated within 24 to 48 hours and colostrum can be bucket-fed (15); the calf can be moved at birth (or when dry in winter) to a calf hutch (4). At 12 to 24 hours after birth, blood immunoglobulin levels tended to be higher in calves fed colostrum 1 to 2 hours after birth than in those fed colostrum 6 or 12 hours after birth. "There was no meaningful relation between calf mortality and the time cow and calf remained together ( $r = -0.14$ ,  $n = 106$ )" (34). An account of Camargue cows, a breed found in southern France, indicates that a cow leaves the herd to give birth, hides the calf for the first 3 to 4 days, and returns only to nurse it for short periods. Calves then join a subgroup of young animals, which tend to play and sleep together. Nursing appears to be a community activity, as most dams nurse their calves about the same time. Calves travel together when the herd moves (26). A cow and her calf usually bond shortly after birth; however, it is not unusual for cows to accept nursing by several calves (43). Suckled Friesians weaned at 7 months and transported to new housing required longer to habituate to the new environment than did artificially

reared Friesians (4 vs 2 days). However, previous rearing did not appear to have any long-term effects on behavior (91).

### **Neglect of Unwanted Bull Calves**

Newly born bull calves a few days old are generally transported to slaughter, to auction, or to ranches specializing in rearing dairy beef or veal. Holstein bull calves are becoming popular feedlot animals. One broker handles 45,000 per year and raises an additional 5,000 female dairy calves (82). Dairy operators may turn rearing of male and female calves to specialists because of limitations in labor, land, and facilities. Recommended care for surplus calves includes the following:

- provide colostrum and adequate feed soon after birth
- house in well-drained, sunny, sheltered, outdoor pens free of hazards or in clean, dry, indoor pens
- avoid overcrowding
- use clean, sterile feeding utensils
- market only healthy calves that are at least 5 days old
- transport calves in clean vehicles and protect them from wind, heat, or cold during transport (which is more stressful than castration or dehorning)
- avoid overcrowding and physical abuse by handlers
- drive to avoid injury, stop at 2-hour intervals to check calves, and do not travel continuously more than 20 hours (44,54,74).

### **Housing**

Diseases are easier to control and intersucking can be avoided when calves are raised individually. Outdoor hutches are becoming increasingly popular because it is difficult to properly regulate air and humidity in enclosed housing (4). However, calves are reared in warm, enclosed barns; cold, enclosed barns; open-front barns; various types of hutches; and on nurse cows (4,15,31,67,74). Individual pens (either in enclosed or open housing) were the most common method of rearing calves (53 percent), and group pens were the least common method (12 percent); some dairies combine both types of rearing (calves were kept inside for a few weeks and then moved to outside hutches (35 percent).

Calf losses were substantially higher in herds where calves were reared in enclosed housing (95). Calves reared in groups consumed solid feeds at an earlier age and had higher average daily gains (ADG's) than calves raised individually (93). However, in a study involving six pairs of monozygous twin heifers, feed intake and ADG to weaning did not differ when one twin heifer was reared in a group and the other was raised in a hutch (69). Physiological data indicated a decreasing gradation of stress to calves raised in individual stalls, individual pens, hutches, and group housing (40). Calves in individual stalls and pens were on wooden slats, however, while hutch and group calves were on a dirt base. Rearing calves with nurse cows is a more common practice in beef production. The number of calves must be adjusted to the milk yield of the cow. The cow usually must be restrained before it will accept nursing by strange calves. Proponents of the system claim it offers labor savings and a lower incidence of digestive upsets and bacterial infections (74).

### **Failure To Use Welfare-Related Research Knowledge**

In the opinion of the HSUS's Fox, "the welfare of dairy cows, especially in small and medium-sized, owner-operated

herds, is generally far superior to that of other farm and animal species" (36). Research studies on welfare-related topics "reflect the close correlation between welfare and maximizing individual productivity" (36). The 1988 "Guidelines for Dairy Cattle Husbandry" (3) were based on current practices and research data. The guidelines also illustrate the diversity of management facilities and practices. While it may be feasible to immediately adopt improved animal-related practices, changing the cow's physical environment according to all the latest research recommendations may not be feasible. Economics dictate that most capital facilities be depreciated over several years.

### **Production-Related Susceptibility to Disease and Metabolic Disorders**

The average cow in the United States today produces about six times more milk than the average cow did at the turn of the century (6,655 vs. 1,136 kg) (58,88). Cows in some herds produce more than 11,000 kg of milk. Worldwide, milk per cow continues to increase about 1.25 percent yearly, which may make future cows even more susceptible to metabolic disorders (58). However, this increase was possible only through improved genetics, artificial breeding, nutrition, disease control, and management. The ratio of milk cows to human population in the United States has decreased from 1:5.6 (1940) to about 1:27 today. There is no evidence that the genetic increase has plateaued (individual cows have produced more than 28,600 kg of milk. To remain competitive in a free-market economy, dairy managers will continue to rely on genetic improvements, least-cost balanced rations, disease control, and improved cow comfort.

Ketosis, one of the most important metabolic diseases of high-producing cows, has an incidence of about 4 percent (58). It may be induced by a prolonged energy deficit plus an influx of the precursor of ketosis and may be reversed by effective treatment (62). Preventive measures include use of rations that prevent cows from becoming excessively fat before they calve and feeding of concentrate with adequate amounts of high-quality forage after calving. Measures to prevent ketosis should also reduce the incidence of displaced abomasum, which is apparently caused when dry cows or cows in early lactation are fed excessive concentrates and insufficient dietary fiber. Proper rations can also help prevent milk fever, a disease whose incidence increases at the fifth or sixth lactation. Feeding a diet low in calcium at least 5 days before calving stimulates the parathyroid in preparation for the increased needs for parathyroid hormone and 1,25-(OH)<sub>2</sub>D after calving (58).

## **Concerns Expressed By Animal Rights Activists**

### **Separation of Cow and Calf at Birth**

The need to separate dam and young at birth has been noted, but activists' description of both animals as being in a state of "anguish" (46) or anxiety is not universally accepted (73). Separation soon after birth is common in cattle, an outlying species. Before grazing, cattle mothers, given the opportunity, hide their young for up to several hours at a time. Maternal instincts have not been a focus of selection in dairy cattle, because of the emphasis on milk production; consequently, bonding between dam and young may not be as strong as in

beef cattle or other species. Emotional upset may be lessened by early separation, before bonding has occurred. Intimate human contact during the critical period improves ease of handling and milking temperament (26).

For 305 days, an average dairy cow produces at least six times as much milk as a calf needs daily. Artificially reared dairy calves are usually weaned by 70 days. A calf allowed to ingest excess milk is likely to experience diarrhea and death.

### **Cow Pregnant Continually**

Some activists object to the fact that nearly continuously pregnant cows are constantly burdened with carrying large quantities of milk. Most dairy operators strive for a calving interval of 2 months, but this goal is rarely achieved. Estimated economic losses due to excessive days open (more than 90 days) are \$1.22 per day (56). Inducing lactation using hormone treatment has been about 70 percent successful, but lactation yields were only 70 percent or less than those achieved in previous years (32). The induction of ovulation has been associated with side effects such as abnormal estrous behavior, reduced fertility, cystic follicles and corpora lutea, and chronic vaginal prolapse. Treatment with estrogen reduced abnormal estrous behavior, but milk yields were only 20 percent of normal (78).

An average cow carries 5 lbs. (11 kg) of milk in her udder at milking time if milked twice daily. This is about 1.6 percent of her body weight (equivalent to about 2 pounds for a 120-pound human). Cows in many high-producing herds are now milked 3 or 4 times daily, leaving less milk in the udder than twice-daily milking. Cows spend about half the day lying down, which relieves strain on muscles and ligaments that support the udder weight. Beef calves suckle only about 5 times per day (43,54).

### **Longevity**

Few cows live to be 15 years of age. A 27-year-old Holstein cow in Wisconsin generated considerable publicity when she died, after giving birth to 22 calves in her lifetime (13).

Records of nearly 300,000 Holstein (the predominant U.S. breed) from 1966 to 1986 indicated that average herd life was 3.4 lactations (64), which means cows leave the herd at about 6 years of age. The average age reported in Wisconsin Holstein herds was 5 years (76). Herd life was positively correlated with production during the first lactation. More than 56 percent of cows culled in the first lactation were culled because of low production (28). Nutrition affects the expression of genetic potential, age at puberty, breeding age, and calving age and is the most important environmental factor influencing lifespan within the herd (31). Lower production, slower increases in herd size, shorter first calving intervals, and longer subsequent calving intervals explained 70 percent of the variation in the average age of a herd (76). All these factors except shorter first calving intervals would tend to lower income. Reducing incidence of disease (including mastitis), injury, and reproductive problems would contribute to an opportunity to increase average herd age.

### **Use of Drugs To Maintain Health, and Antibiotics as a Regular Feed Additive**

Antibiotics are commonly used in calf feeds until the calf is about 4 months old to improve growth, reduce the incidence

of scours, and improve appetite (15,31). Feeding antibiotics to adult cows is not recommended (31). Antibiotics have greatly reduced the incidence of contagious diseases of cattle, some of which endangered human health (53). Antibiotics have been used for more than 30 years to prevent and treat mastitis, but care must be taken to avoid residues in milk or meat. In 1990, the Milk Industry Foundation tested more than 2 million tankers and detected drug residues in only 0.1 percent of them. Delegates at the 23rd National Conference on Interstate Milk Shipment (April 1991) adopted strict measures to ensure that no antibiotic residues enter the milk supply. Every load of Grade A milk is screened. If residues are detected, the milk is discarded and violators are not allowed to ship milk for 2 days (or if a second offense, 4 days). If there are three violations in a year, the regulatory agency may revoke the violator's Grade A permit (77). Tranquilizers are not used, as some critics allege, nor are hormones implanted to promote milk production.

### Family Farms Being Forced Out

Large farms (those having \$250,000 or more in gross sales in 1990) represent less than 5 percent of U.S. farms. The average farm was 429 acres in 1978 and 461 acres 12 years later — an increase of less than 3 acres per farm per year. There were 170,000 fewer farms in 1987 than in 1978, but 88.5 percent were fully or partly owner operated — an increase of 0.8 percent from 1978 to 1987 (89).

### Harmful New or Prospective Technology

Superovulation and embryo transfer of genetically superior donor cows can significantly improve reproductive rates. The total number of possible ova a cow may ovulate in her lifetime is 21,000 (15). Embryos resulting from repeated superovulation can be split and frozen for future use. In one study, only 43 superovulated donors yielded transferable embryos (6.2/donor) (9). The number of transferable embryos ranged from 5.3 with the first flush to 2.2 on the fifth flush (14). Cows have been superovulated eight times at 50-day intervals and still responded to superovulation (80). There may be a viable alternative to superovulation involving the puncturing of bovine follicles during transvaginal ultrasound scanning, retrieval of oocytes by aspiration, and in vitro maturation and fertilization of oocytes before transfer. The procedure does not interfere with the cow's normal reproductive cycle. It is estimated that 30 transferable embryos could be obtained from the 135 oocytes available per animal in a year (68). Embryos are transferred to recipient cows, usually by nonsurgical techniques similar to those used for artificial insemination (80). There is no evidence that embryo transfer increases the incidence of difficult births. Several factors are associated with difficult births, including those associated with the calf (size, sex, multiple births, malpresentations, and stillbirth) and the dam (body weight and size, pelvic area, and age or parity of dam)(84). The heritability of birthweight (about 0.45) indicates more than half the variation is due to nongenetic influences. The calving ease scores of bulls used in AI enable breeders to select for that trait.

Bovine somatotropin (BST) has recently been approved by FDA but is not at this time extensively used in the dairy industry.

## Environmental Issues

It is estimated that cattle produce about 1.8 percent of the methane in the upper layer of the atmosphere (61). Cows lose about 6 percent of their energy as methane. Losses are about 2 percent for cattle on high-concentrate diets and as much as 12 percent for cattle on all-forage diets. Covering of manure lagoons to trap methane (and control odor) could yield usable energy and substantially reduce methane emissions from livestock. Use of BST would mean that 11 percent fewer cows would be required for the current level of milk production. In turn, this would reduce inputs (feed, 9 percent; nitrogen and phosphorus, 10 percent; cropland, 6 percent; irrigation water, 9 percent; fossil fuel, 12 percent), waste products (urine, 5 percent; manure, 8 percent; methane, 8 percent), and soil loss (5 percent) (52).

Pollution of air, water, and soil has been a concern, especially for larger dairies, since the early 1970's. Registration of facilities and a permit to operate, depending on size of operation (more than 700 mature dairy cows), are required by the U.S. Environmental Protection Agency (EPA) and various State counterparts. These help to ensure that dairy wastes are properly handled (31).

A return to green pastures (38) might distribute animal waste more evenly, but more land and cattle would be required to produce the 148 billion pounds of milk currently consumed in the United States. In New Zealand (N.Z.), where almost all cows graze pastures, average milk production is 3,346 kg milk/cow vs. 6,461 kg in the United States. (89). Milk production by AI daughters of U.S. and N.Z. bulls was almost equal when they were milked in a common environment (4,174 vs. 4,015 kg milk and 163 vs. 161 kg fat for U.S. and N.Z. respectively in Polish tests (41)). Public attitudes are the major obstacle to utilization of waste. Animal waste may be used as fertilizer, bedding material, feed supplement, and (as biogas) for energy production.

Ensiled, dehydrated, or mechanically (aerobically) digested manure is no longer an air pollutant and has a chemical composition similar to that of the original feed. Waste from other species can be used as a high-quality ingredient in dairy rations (8).

Some animal rights activists advocate restricting animal or human populations to a size that will enable them to be fed strictly from plant source foods (47,96). An official with the American Medical Association noted that it would be difficult to receive the minerals, vitamins, and other nutrients recommended by the National Academy of Sciences without regular consumption of meat and dairy products (6). Cropland represented about 18 percent of U.S. acreage in 1987. Pasture, including 3 percent cropland used for pasture, was 29 percent; forest land, which includes some land devoted to livestock grazing acreage, was another 29 percent (89). Ruminants (including dairy cattle) convert to human food much of the plant material on these pastures and forest lands, a resource that otherwise would be wasted. Cattle also consume many byproducts, such as cottonseed hulls, cull fruits and vegetables, and brewery waste, that would otherwise be discarded.

## Outcome

Dairy farm numbers will continue to decrease, as will man-hours to the amount of milk produced. Average herd size, milk yield per cow, and use of free stalls and/or dry lots will

continue to increase. The industry will continue to meet animal welfare guidelines that now govern use of dairy teaching and research animals (3). The animal rights/welfare movement will probably become more influential, and dairy producers should be aware of their legitimate concerns about animal welfare. New technologies will let dairy managers observe animals more closely and thereby improve management. New technology will also help researchers measure and evaluate animal stress, information that will be useful in developing computer models of the stress associated with various production practices. Drug and antibiotic residue in meat and milk will be regulated more carefully, and standards of milk quality will increase. Methods will be found to reduce pollution associated with intensive dairy farming practices. These improvements are unlikely to persuade the animal rights activists that animal agriculture should not be eliminated. Nonetheless, explaining to consumers the reasons underlying the practices used on dairy farms and the benefits that accrue from dairy products will certainly improve the credibility of the dairy industry.

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# Virtual Surgery in Veterinary Medicine

by

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The veterinary students prepare for surgery class. But they are not washing their hands or sterilizing their instruments. Is this characteristic of one of the best veterinary programs in the country? Actually, yes.

Michigan State University is establishing a curriculum for its School of Veterinary Medicine that will transform surgical instruction. The technology behind the new teaching methods is virtual reality. Virtual reality is a fairly new science, involving the creation of a three-dimensional, interactive, computerized environment. Among its hundreds of applications, medical procedures have been among the first to be developed.

## Virtual Reality

In order to create a virtual environment, one must have two basic elements. The first is the hardware, such as head-mounted devices and tactile instruments. The head-mounted devices (HMD) are worn by the user, and are used to view the three-dimensional virtual environment. HMD come in several forms, such as helmets and special goggles. Tactile instruments give the user the illusion of touch. For example, a wand can be used as a scalpel; the user cuts into the virtual patient's muscle and can feel when the scalpel "hits" bone.

The second component is software, which is used to create the environment. Today, several graphics packages offer the detail and three-dimensional quality that can be used to reproduce everyday objects.

## Medical Applications and Developments

Applications of virtual reality in the

medical field revolve mainly around educational and training purposes. Three-dimensional models of body parts can be used to teach basic anatomy, bodily processes, and how disease affects the body, as well as train students in performing common medical procedures (such as administering injections) and surgical procedures. Virtual reality can also be used by physicians and surgeons. For example, physicians can show their patients how their illnesses

enlarged, so that students can walk around inside of it. One important point must be made here: Virtual surgery techniques are by no means intended to *replace* actual surgical training, but rather to offer alternatives to the use of actual animals.

## The M.I.N.D. Lab

The Department of Telecommunication at Michigan State University recently

established the Media Interface and Network Design (M.I.N.D.) Lab—a facility which specializes in the development of virtual environments. The M.I.N.D. Lab is working with the University's School of Veterinary Medicine to build several "virtual surgery" environments for a new curriculum. The goals of this new project, called the MSU Vet-Med Animal Simulator Project, include providing additional



are affecting their bodies. Surgeons may use virtual surgery to perfect their own techniques. For example, a surgeon can create a virtual situation identical to that of her/his patient, and thus practice the surgery before actually performing it.

Most of the developments in the field have been contributions to human medicine. However, the same procedures may be used with regard to veterinary science. One of the main benefits of this technology is the reduction in the number of animals needed for educational purposes. Students also have no limits to the number of times they can practice a procedure. Learning can also be made easier by the ability of the user to manipulate the image. For example, a virtual dog's abdominal cavity may be

surgical training and developing new methods for surgical instruction. Among the procedures being transferred into virtual reality are endotracheal intubation, ovariohysterectomy and castration, intravenous catheterization, and venipuncture.

The project is still in its early stages; currently, the staff is working on developing realistic models. Other problems native to virtual reality have also appeared on this project, such as development of realistic tactile senses and slow scene-updating rate.

The M.I.N.D. Lab officially opened on March 18, 1998. If you would like to learn more about the M.I.N.D. Lab, please visit our website at <http://www.mindlab.msu.edu>

## Livestock cont'd from p.2

vehicles onto the unloading dock. Transporting calves in personal vehicles (such as the trunk of a car) to market or packing plants is not a humane practice and should be avoided.

A more desirable management practice is being conducted in large dairy States such as California. Calves are raised by producers who specialize in calf rearing. Employees from these operations pick up calves from dairies. In some cases, it may be beneficial to the health of the calf if the calf raiser acquires it from a dairy at an early age. The dairyman must feed colostrum shortly after birth, before the calf is picked up by the calf raiser. Failure to feed colostrum often results in a high death rate.

### Crippled Downer Hogs

The incidence of crippled hogs that are unable to walk is much greater than the incidence of downer cattle. In cattle, a very high percentage of the downers are old animals that have reached the end of their productive life. In hogs, however, a high percentage of downers are young, finished, market-weight animals. Much of this could be prevented by selective breeding and use of nonslip floors. Fortunately, because of their small size, downer hogs, sheep, and goats are much easier to handle than downer cattle. They can be easily rolled into a cart and moved.

When a front-end loader is used to move a downed hog, one person must operate the machine while another rolls the hog into the bucket. Shoving a hog against a wall or fence to get it into the loader bucket is a bad practice and should be discouraged.

Hogs that are likely to become downers are:

- those that are crippled,
- old, weak, emaciated sows that were allowed to deteriorate into a weakened condition before being brought to a livestock market, or
- sick, decrepit animals brought to a livestock market by a producer who is feeding hogs under a contract. Some contract growers must bring such animals into the auction market in order to get credit for them from the contracting company. This practice should be avoided.

## Farm Management To Prevent Crippled Hogs

To reduce numbers of crippled hogs:

1. Weak and/or emaciated sows that are unable to walk should not be accepted for sale at a livestock market. They should be either euthanized on the unloading dock at the market or transported immediately to a nearby slaughter plant.
2. Many downer hogs are caused by an inherited weakness in the hindquarters. Selection of breeding stock for soundness will reduce downers caused by spraddle legs.
3. Some hogs and sows have foot problems that are caused by improper flooring. Use of concrete flooring is preferable for finishing hogs and the breeding herd. Metal, woven wire, or plastic are acceptable in the farrowing house and nursery. Use of plastic, woven wire, or expanded metal floors in the finishing barn may cause excessive hoof growth that makes walking difficult. These types of flooring are suitable for younger pigs, however.
4. Install nonslip flooring in areas where hogs are driven, weighed, and loaded.
5. Producers should breed for a low incidence of porcine stress syndrome

## Code of Federal Regulations

[Title 9, Volume 2, Parts 200 to end]  
[Revised as of January 1, 1997]  
From the U.S. Government Printing  
Office via GPO Access  
[CITE: 9CFR313.2], [Page 143--144]

### TITLE 9—ANIMALS AND ANIMAL PRODUCTS

#### CHAPTER III—FOOD SAFETY AND INSPECTION SERVICE, MEAT AND POULTRY INSPECTION, DEPARTMENT OF AGRICULTURE

#### PART 313—HUMANE SLAUGHTER OF LIVESTOCK

##### Sec. 313.2 Handling of livestock

(a) Driving of livestock from the unloading ramps to the holding pens and from the holding pens to the stunning area shall be done with a minimum of excitement and discomfort to the animals. Livestock shall not be forced to move faster than a normal walking speed.

(b) Electric prods, canvas slappers, or other implements employed to drive animals shall be used as little as possible in order to minimize excitement and injury. Any use of such implements which, in the opinion of the inspector, is excessive, is prohibited. Electrical prods attached to AC house current shall be reduced by a trans-

former to the lowest effective voltage not to exceed 50 volts AC.

(c) Pipes, sharp or pointed objects, and other items which, in the opinion of the inspector, would cause injury or unnecessary pain to the animal shall not be used to drive livestock.

(d) Disabled livestock and other animals unable to move.

(1) Disabled animals and other animals unable to move shall be separated from normal ambulatory animals and placed in the covered pen provided for in Sec. 313.1(c).

(2) The dragging of disabled animals and other animals unable to move, while conscious, is prohibited. Stunned animals may, however, be dragged.

(3) Disabled animals and other animals unable to move may be moved, while conscious, on equipment suitable for such purposes; e.g., stone boats.

(e) Animals shall have access to water in all holding pens and, if held longer than 24 hours, access to feed. There shall be sufficient room in the holding pen for animals held overnight to lie down.

(f) Stunning methods approved in Sec. 313.30 shall be effectively applied to animals prior to their being shackled, hoisted, thrown, cast, or cut.

The Code of Federal Regulations, and other Federal publications, can be searched on the web site of the U.S. Government Printing Office at [http://www.access.gpo.gov/su\\_docs/dbsearch.html](http://www.access.gpo.gov/su_docs/dbsearch.html)

(PSS). Hogs that carry the stress gene are more likely to be hard to handle and to go down. Some of these animals will recover if they are allowed to rest.

6. Hogs with hernias or prolapses should be marketed promptly or euthanized before they become weak and debilitated from either infection or a strangulated intestine.

### Euthanasia

When euthanasia is required, humane methods must be used. The recommended method of euthanasia for cattle, hogs, and sheep that go down in a truck or at a livestock market is a captive bolt stunner or a gun. The captive bolt is safer than a gun, because it does not fire a free bullet. A blank cartridge propels a steel bolt into the animal's brain. This has the same effect as a gun and kills the animal instantly. Captive bolt stunners can be obtained from packing plant supply companies for about \$200. Figure 1 shows the correct position for stunner placement. Cattle are shot in the center of the forehead. Sheep are shot on the top of the head, and hogs are shot in the forehead. The same positions are used for a gun.

### Policies at Markets and Stockyards

Livestock markets should refuse to accept cattle and hogs that are unable to walk. Downed nonambulatory cows that are brought to a livestock market either should be immediately euthanized or should be transported directly to a nearby slaughtering establishment. Many livestock markets currently have a "no downer" policy. Some markets do not allow sellers to unload downers.

Many large cow slaughter plants have stopped accepting downers and very debilitated cattle. This has resulted in some severely crippled animals being shipped for several hundred miles. To prevent this, severely debilitated or nonambulatory cattle should be euthanized on the farm unless there is a local nearby slaughter plant.

In some States, dairies and feedlots use a portable slaughtering service to slaughter downed animals and salvage the meat. Another alternative

has been proposed by Dr. Stanley Held, Minnesota. He proposes to inspect a downed cow on the farm, euthanize it, and then transport it immediately to a nearby federally inspected packing plant.

There is no simple answer to this problem that is both humane and economical. The first step is to upgrade movement of animals at the farm, livestock market, and packing plant, and reduce the number of downed animals that must be handled. Livestock organizations like the National Pork Producers Council have recently adopted strong "no downer" policies. Prevention, stronger policies, and proper handling methods should be acknowledged in assisting with practices affecting downer animals and newborn calves.

### References

(9 CFR) *Code of Federal Regulations Title 9, Sec. 313.2 (d) (2)* (1997). Handling of livestock. National Archives and Records Administration: Washington, D.C.

*Code of Practice of the Welfare of Animals in Livestock Markets* (1990). Ministry of Agriculture, Fisheries and Food, London, England.

Grandin, T. (1985). Treatment of livestock in Southeast U.S. markets. *Proceedings, Livestock Conservation Institute*, pp. 14-24.

Grandin, T. (1990). Handling practices in U.S. feedlots and packing plants. *Proceedings, Livestock Conservation Institute*, pp. 115-120.

Grandin, T. (1990a). Calves should be old enough to walk. *Hoard's Dairyman*, September 25, 1990, p. 776.

*The Humane Methods of Slaughter Act of 1978*. (Pub. L. 95-445, 92 Stat. 1069) amends the Federal Meat Inspection Act (21 U.S.C. 601 et seq.).

*National Nonfed Beef Quality Audit* (1994). Executive Summary, National Cattlemen's Beef Association, Englewood, CO. ■

Due to the scientific and technical nature of the material in this publication, we are changing the name to the Animal Welfare Information Center Bulletin

## New from AWIC

### Updated Website

- Databases: Links to DIALOG, OVID, PREX and free databases such as AGRICOLA, MEDLINE, and CRIS.
- Legislation, Regulations, Policies, and Guidelines: Federal, non-Federal, and international documents including the Animal Welfare Act, amendments, and regulations.

### New Publications

(All publications are located on the AWIC website at [www.nal.usda.gov/awic](http://www.nal.usda.gov/awic) unless otherwise noted.)

- *Animal Welfare Act: Historical Perspectives and Future Directions* Symposium Proceedings
- *Animal Welfare Issues Compendium: A Collection of 14 Discussion Papers* (USDA, Cooperative State Research, Education and Extension Service)
- *Environmental Enrichment Information Resources for Laboratory Animals 1965-1995*
- *Handling Fish Fed to Fish-eating Animals: A Manual of Standard Operating Procedures* (NOTE: This is not a manual of fish husbandry. It discusses techniques for proper handling of frozen fish that will be fed to captive animals.)
- *Directory of Resources on Alternatives and Animal Use in the Life Sciences 1998* (AWIC Resource Series # 1, 2<sup>nd</sup> edition)
- *Information Resources for Adjuvants and Antibody Production: Comparisons and Alternative Technologies* (Revised June 1998)
- *Selected Websites for Biomedical, Pharmaceutical, Veterinary, and Animal Science Resources 1998* (AWIC Fact Sheet) Not yet available on the Web.
- *Selected Databases for Biomedical, Pharmaceutical, Veterinary, and Animal Science Resources 1998* (AWIC Fact Sheet) Not yet available on the Web.

# APHIS Regulatory Update

## Regulation of Pocket Pets

Federal Register: January 21, 1998 (Volume 63, Number 13), Page 3017], DEPARTMENT OF AGRICULTURE, Animal and Plant Health Inspection Service, 9 CFR Parts 1, 2, and 3, Docket No. 97-024-1, RIN 0579-AA89

**SUMMARY:** This document gives notice that we are now regulating under the Animal Welfare Act the handling, care, and treatment at retail pet stores of small mammals commonly referred to as "pocket pets" and requiring any retail pet store that sells pocket pets to be licensed as a dealer under the Animal Welfare Act. This action is necessary because the Animal Welfare Act regulations require regulation of all persons who sell exotic or wild animals for research, exhibition, or for use as a pet, and we consider pocket pets to be exotic or wild animals for this purpose.

For Further Information Contact: Bettye K. Walters, D.V.M., Staff Veterinarian, Animal Care, APHIS, USDA, 4700 River Road Unit 84, Riverdale, MD 20737-1234, (301) 734-7833.

**SUPPLEMENTARY INFORMATION:** The Animal Welfare Act (AWA)(7 U.S.C. 2131 et seq.) authorizes the Secretary of Agriculture to promulgate standards and other requirements governing the humane handling, housing, care, treatment, and transportation of certain animals by dealers and other regulated businesses. The Secretary of Agriculture has delegated the responsibility for enforcing the AWA to the Administrator of the Animal and Plant Health Inspection Service. Regulations established under the AWA are contained in 9 CFR parts 1, 2, and 3. APHIS regulates animal dealers by issuing them annual licenses and conducting unannounced inspections of their premises to check for compliance with the AWA standards and regulations.

In recent years, several species of small, generally non-dangerous mammals, including hedgehogs, degus, spiny mice, prairie dogs, flying squirrels, and jerboas, have increasingly been sold at retail pet stores in the United States. These and other small mammalian species are collectively and commonly referred to as "pocket pets." However, none of these species, some of which are native to the United States and others of which are native to foreign countries, have been domesticated as pets in the United States in the sense that dogs, cats, and other common pet-type animals have been domesticated. Therefore, APHIS considers pocket pets to be exotic or wild animals under the AWA regulations, and any retail pet store that sells a pocket pet is subject to AWA regulation.

Several years ago, some retail pet stores across the United States started selling limited numbers of pocket pets on a sporadic basis. In general, retail pet stores are exempt from AWA regulation unless they sell animals to a research facility, an exhibitor, or a dealer. Our policy was not to regulate the retail pet stores that were selling pocket pets because the effort needed to identify and regulate these stores did not appear to be a prudent use of our AWA enforcement resources. However, we continued to reevaluate this policy as the popularity of pocket pets grew among U.S. consumers. Because many retail pet stores are now selling pocket pets on

a regular basis, we now believe that it is feasible and necessary to identify and regulate these stores.

Therefore, we are giving notice that, in order to ensure the humane care and treatment of pocket pets in the commercial pet trade, we are now regulating the handling, care, treatment, and transportation provided to such animals by retail pet stores and requiring that retail pet stores dealing in these animals be licensed under the AWA. The AWA licensing requirements for animal dealers are specified in 9 CFR part 2, subpart A, and the care standards for pocket pets are covered in 9 CFR part 3, subpart F. For information about becoming licensed as a dealer under the AWA, contact the person listed above under *For Further Information Contact*.

## USDA Amends Animal Welfare Act Wire Flooring Requirements

WASHINGTON, Jan. 16, 1998—The U.S. Department of Agriculture is amending regulations for the humane treatment of dogs and cats by requiring that wire floors in primary enclosures for dogs and cats be constructed of coated wire if the wire is less than a certain diameter.

"We believe that coating wire floors made of small-diameter wire will improve comfort for dogs and cats and will help eliminate foot injuries," said W. Ron DeHaven, acting deputy administrator for animal care with the Animal and Plant Health Inspection Service, a part of USDA's marketing and regulatory programs mission area.

USDA is amending the Animal Welfare Act regulations so that, if the wire floor of dog and cat primary enclosures is constructed of wire equal to or less than 1/8 of an inch in diameter, the wire must be coated with a material such as plastic or fiberglass. USDA will also require that any wire floor, coated or not coated, used for dog and cat primary enclosures be constructed so that the floor does not bend or sag between the supports.

Notice of this action was published in the Jan. 20 Federal Register. For further information or a copy of Docket No. 95-100-2, contact: Stephen Smith, animal health technician, Animal Care, APHIS, USDA, 4700 River Road Unit 84, Riverdale, Md. 20737-1234, phone: (301) 734-4972.

## USDA Amends Animal Welfare Act Temperature Regulations

WASHINGTON, March 3, 1998—The U.S. Department of Agriculture amended the Animal Welfare Act regulations today, revising certain requirements pertaining to climatic conditions for animals protected under the law.

"Too many times animals have suffered because of climatic conditions not consistent with their health and well-being," said Michael V. Dunn, USDA's assistant secretary for marketing and regulatory programs. "We are going to put a stop to that with these changes."

The amendments clarify the current climatic conditions allowed for dogs and cats in indoor, sheltered, and mobile housing facilities; in primary conveyances used for transport-

tation; and in animal holding areas of airport terminal facilities. USDA will also require that any animal covered by the AWA not be exposed to combinations of time, temperature, and humidity that would adversely affect the animal's health and well-being. The responsible party must take into account the animal's health status, age, breed, and other pertinent factors.

"The amended regulations mandate that when climatic conditions present a threat to an animal, appropriate measures be taken to alleviate the impact of those conditions. To not do so would be a violation," Dunn added.

For further information contact Stephen Smith, staff animal health technician, AC, APHIS, Suite 6D02, 4700 River Road Unit 84, Riverdale, MD. 20737-1234, (301) 734-7833, or e-mail [ace@aphis.usda.gov](mailto:ace@aphis.usda.gov).

This action was published in the March 4 Federal Register and becomes effective on April 3.

## USDA Amends Animal Welfare Act Regulations, Adding Swim-with-the-Dolphin Requirements

WASHINGTON, Sept. 3, 1998—The U.S. Department of Agriculture is amending the Animal Welfare Act regulations to establish standards for "swim-with-the-dolphin" interaction programs.

"These new regulations will help us ensure the safety and well-being of marine mammals used in swim-with-the-dolphin programs," said Michael V. Dunn, assistant secretary for marketing and regulatory programs. "Until now, there have been no program-specific regulations. We believe it is in the best interests of the animals to add such regulations."

The new regulations will address several issues including handling, space requirements, and training.

The effective date of the amendments is Oct. 5 and they will be published in the Sept. 4 Federal Register. APHIS documents published in the Federal Register, and related information, including the names of organizations and individuals who have commented on APHIS rules, are available on the Internet at

<http://www.aphis.usda.gov/ppd/rad/webrepor.html>

For more information on this final rule (Docket No. 93-076-10) contact Barbara Kohn, senior staff veterinarian, Animal Care, APHIS, 4700 River Road, Unit 84, Riverdale, Md. 20737-1228, (301) 734-7833.

*NOTE: USDA news releases, program announcements, and media advisories are available on the Internet. Access the APHIS Home Page by pointing your web browser to <http://www.aphis.usda.gov> and clicking on "APHIS Press Releases." Also, anyone with an e-mail address can sign up to receive APHIS press releases automatically. Send an e-mail message to [majordomo@info.aphis.usda.gov](mailto:majordomo@info.aphis.usda.gov) and leave the subject blank. In the message, type `subscribe press_releases`*

## Animal and Plant Health Inspection Service's FOIA website

<http://foia.aphis.usda.gov>

### Categories of APHIS Information

- **Animal Health**

This category contains information on animal diseases. Retrievable reports may include the location, date, and quantity of documented diseases such as scrapie, tuberculosis, and brucellosis.

- **Animal Welfare**

Animal welfare reports contain information about animal protection against cruelty and inhumanity. In places where APHIS holds animal welfare information in databases, customers will be able to query ANY and ALL fields of data that are subject to the Freedom of Information Act. In other cases, customers will be able to retrieve archived animal welfare reports.

- **Financial**

Financial reports contain information about various financial activities and fees conducted by USDA--APHIS. In places where APHIS holds financial information in databases, customers will be able to query ANY and ALL fields of data that are subject to the Freedom of Information Act. In other cases, customers will be able to retrieve archived financial reports.

- **Imports and Exports**

APHIS stakeholders will be able to track APHIS import and export activities through detailed report retrieval. Available information will include such things as animal herds imported from other countries, including the quantity of animals received and final shipping destinations. Similar information will be able to be tracked for plants and exports.

- **Personnel**

This category of information consists of personnel reports. Personnel reports contain information about various personnel employed by USDA--APHIS. In places where APHIS holds personnel information in databases, customers will be able to query ANY and ALL fields of data that are subject to the Freedom of Information Act. In other cases, customers will be able to retrieve archived personnel reports.

- **Wildlife Damage**

This category consists of information on the Animal and Plant Health Management Inspection Service's management of various types of wildlife in different geographical regions. Reports that may be generated in this category will show the types, quantities, and wildlife damage management methods (if applicable) for American wildlife.

- **Electronic Reading**

The Electronic Reading Room contains documents specifically identified Room for inclusion by the Freedom of Information Act, as well as documents for which we have received multiple FOIA requests. The number of items in the Electronic Reading Room will grow. ■

# Animal Care: Safeguarding the Welfare of America's Animals

by

Jamie Ambrosi

APHIS, Legislative and Public Affairs, Riverdale, MD

*Article originally appeared in  
Inside APHIS, Summer 1998*

The scene is tense. A crowd of 250 animal rights advocates, industry representatives, and interested members of the public pack into the conference center at the APHIS Headquarters building in Riverdale, MD.

Cordial but cautious, they all come to the May 12 Animal Care (AC) public meeting for one reason: to learn what APHIS has been doing to improve enforcement of the Animal Welfare Act (AWA). Outside, the rain pounds against the windows. Inside, the questions spring from the floor.

"What has USDA been doing to improve the oversight of commercial dog dealers?" asks one individual. "What are USDA's plans regarding the testing of circus elephants for tuberculosis?" asks another.

Ron DeHaven, AC's Acting Deputy Administrator, has anticipated these questions for weeks. In fact, as head of the program that enforces the AWA, he's been hoping they would be asked. The questions provide him the opportunity to showcase the program's efforts. Assistant Secretary for Marketing and Regulatory Programs Michael V. Dunn, who sits by DeHaven's side with Acting APHIS Administrator Craig Reed, strongly supports these efforts.

"I'm glad you asked," begins DeHaven. "Let me take a few minutes to recap some of the many changes our program has undergone in the past 2 years."

## A United Effort

In April 1996, APHIS issued its strategic direction for the Animal Care program. The document painted the picture of a program with vast potential but in need of an overhaul. It also detailed the steps AC needed to take to improve. These included making better use of resources for enhanced program delivery and empowering, supporting, and developing employees.

From the start, the strategic direction had the backing of Dunn and other

high-level Department officials. As Dunn notes, "We knew what needed to be accomplished, and we gave our full support to AC employees to get the job done."

Capitalizing on this support, AC wasted no time in putting the plan into action. The program established eight employee-based teams, each focusing on one or more of the plan's objectives. It also created an initiatives coordinator position to oversee the teams and ensure that the strategic direction moved forward.

"The strategic direction document was basically a mandate to reinvent the AC program," says Dick Watkins, AC's initiatives coordinator. "The strategic direction said, 'Don't be modest. Take risks and make major changes.'"

For the next several months, AC employees from California to the Carolinas descended on APHIS headquarters with the charge of revamping the way AC did business. The employees looked at everything from the way the program conducted inspections to ways to better educate stakeholders—such as licensees and animal rights activists—about the laws and regulations. The employees had numerous suggestions for improvements.

"At one point, I think we had more proposed changes than we had employees to carry them out," says DeHaven. "However, it was easy to identify the high-priority items."

## What to Change First?

"One of the first items we looked at changing was our inspection system for AWA licensees and registrants," says DeHaven. "We realized that with decreasing resources and increasing costs we would need to change our policy of inspecting all regulated facilities at the same frequency."

This concept first surfaced at AC's public meetings on the regulation of dog dealers in early 1996. But serious concerns remained. Any decrease in the frequency of inspections would be viewed by animal welfare organizations

as making APHIS' AWA inspection system less stringent. And any new system had to be fair and equitable for all licensees and registrants.

To handle these thorny issues, AC knew it needed to establish an inspection system that was both objective and impartial. The system must rate everybody using the same criteria. The result? AC's new risk-based inspection system (RBIS). This system uses several criteria, such as licensees' or registrants' past compliance history and types of animals being used (e.g., tigers versus gerbils), to determine risk and inspection frequencies for given facilities.

Still, implementing the plan wasn't easy. "It took us 2 years of hard work and headaches to make RBIS a reality," says Bob Gibbens, AC's Western Region Director and a member of the team that developed the system. "Some of our inspectors even had reservations at first, not to mention how it was viewed by those outside the agency."

However, in time, these concerns turned into confidence for the risk-based system. And, by the time it was officially launched in February of this year, the system was broadly supported both by AC employees and the program's stakeholders.

"Right now, we are seeing tremendous support for RBIS," says Watkins. "People are realizing that it is a fair and equitable way to do more with less. And, after all, isn't that what reinventing government is all about?"

## Less Frequent, but More Focused Inspections

To complement RBIS, AC also changed the focus of its inspections. "After 30 years of conducting as many inspections as possible, we began performing more in-depth inspections, particularly of those licensees and registrants who historically had compliance problems," says DeHaven.

"The result is a slight decrease in the overall number of inspections but a significant increase in the amount of

time spent inspecting individual facilities. And that means more time to search for any problem areas."

## Carrot-and-Stick Approach

AC also modified its enforcement strategy. No longer does the program treat all alleged AWA violators the same. Under a new two-pronged strategy, AC and Investigative and Enforcement Services (IES) pursue innovative penalties for licensees and registrants who show an interest in improving the conditions for their animals. These penalties allow the individuals to invest all or part of their monetary sanctions in facility improvements.

At the same time, AC and IES have pursued stringent penalties for licensees and registrants who do not improve the conditions for their animals. Such actions typically include significant monetary sanctions, such as a \$200,000 fine that was levied against a circus for the death of an elephant in the southwestern United States in August 1997.

"The idea is to get off the backs of those that are in compliance, work with those who want to improve, and get tough on the bad actors," DeHaven proclaims.

AC's numbers speak for themselves. During the past 2 years, more than \$1.8 million in fines have been assessed and nearly 50 licenses suspended, revoked, or disqualified. All the while, AC and IES have virtually eliminated the once insurmountable backlog of AWA cases in the legal pipeline.

## Provide Tools to Do the Job

But AC's efforts don't stop with the new plans for focus and enforcement. The program has also undertaken several initiatives to better equip its field personnel with the tools they need. For example, AC has provided its entire AC field force with laptop computers, allowing them to eventually produce electronic inspection reports that can be instantly transmitted to the AC regional offices.

AC also has consolidated several volumes of often conflicting and confusing policies into approximately 20 sensible and understandable ones. These policies are interpretations of the regulations and are used by field personnel when conducting inspections. By hav-

ing one easily portable manual that is used by all field personnel, AC can ensure that the AWA is being interpreted the same way throughout the country. (As a side benefit, AC has made these policies available to stakeholders for the first time.)

In addition, AC has held two national training conferences for AC field personnel, the most recent of which took place in March of this year. As with the rewritten policies, the focus of these conferences was establishing uniform inspection procedures throughout the country.

"We want to make sure our inspectors are saying the same thing in Honolulu as they are in Houston and Hartford," says Jeanne Lorang, AC field inspector in the western region and a member of the team that helped to plan the national training conference. "Our policies and national training conferences are making this goal a reality."

As a final training piece to the puzzle of inspection consistency, AC will hold three training sessions later this year that pertain specifically to elephant care and handling. With all the public attention focused on these popular giants in recent years, AC recognizes the need to provide its inspectors with the best available knowledge on the animals' care. Through these three sessions, AC will train its field personnel who inspect elephants on what to look for and how to look for it.

## Reaching Out To Stakeholders

Still, all these changes would be unknown to the program's stakeholders if they weren't communicated. "If a government program changes in Washington, and the people in Iowa don't know, what good is accomplished?" asks DeHaven. "We must tell our stakeholders where we are going and ask for their input."

AC has used a variety of means to achieve this end. In early 1997, the program undertook a massive survey of 3,700 licensees and registrants to measure customer satisfaction. The survey, part of AC's efforts to comply with the Government Performance and Results Act, helped the program establish baseline levels of service from which to improve. AC has used this valuable data to set goals for the future.

Around the same time the survey was given, AC also launched a multi-

year public awareness campaign. This campaign is designed to raise awareness about AC and its numerous efforts to improve enforcement of the AWA, as well as the Horse Protection Act. Products from the campaign already include a full-color brochure on traveling safely with pets, a corporate-style annual report, and several other valuable informational products.

"One of the most important products," says Watkins, "has been the quarterly report we send to our stakeholders to keep them briefed on program developments. With all of our changes, we believe it is imperative to keep our customers in the loop with where we're going."

Another, more subtle communication enhancement was the creation of a new user-friendly inspection report. The new narrative format provides a list of any items that are not in compliance and a description of the citation. It also references the section of the AWA regulations under which the noncompliant item has been cited. All of this makes the reports much easier for people outside the agency to understand.

## The New AC Emerges

Through all these changes, what has emerged is a new Animal Care program. One dedicated to continuous improvement rather than the status quo, one based on performance-management not placating interests, and one committed to the spirit of reinventing government and the intent of the Government Performance and Results Act.

Nowhere has this been more evident than at the May 12 public meeting (yet another AC effort to communicate better with stakeholders). As DeHaven fields question after question from the probing audience, he reveals the numerous changes that the program has undergone during the past 2 years and comes one step closer to the real reason why AC has spent so many hours and dollars reinventing its operations.

"In essence, we had to put the 'care' back in 'Animal Care,'" says DeHaven. "We had to make it clear that, when we get involved, animals' lives improve. Our work is too critical to have people not understand that essential part of our job." ■

# IACUC's and the World Wide Web

by

Ken Boschert, DVM, Washington University, St. Louis, Missouri

*[Reprinted from Lab Animal, May 1997, with permission. Ed. note: Web addresses have been verified or updated as of September 9, 1998; sites that no longer exist have been omitted.]*

IACUC's (Institutional Animal Care and Use Committees) and other organizations have the opportunity to participate both locally and globally on the World Wide Web. Future client-server databases will make possible online submission and retrieval of research protocol information, shared databases with Federal agencies, and online training and testing tools. The following is a partial list of documents and IACUC-related pages on the web, subject to change.

## Documents of Interest to IACUCs:

- <http://golgi.harvard.edu/biopages.html>  
WWW Virtual Library Biosciences
- <http://netvet.wustl.edu/vetmed.htm>  
WWW Virtual Library Veterinary Medicine
- <http://ss.niah.affrc.go.jp/NIAH/mirror/vetmed/vetmed.html>  
WWW Virtual Library Veterinary Medicine Mirror Site in Japan
- <http://netvet.wustl.edu/>  
NetVet Veterinary Resources
- <http://netvet.wustl.edu/e-zoo.htm>  
The Electronic Zoo

## IACUC and Related Web Pages:

- <http://vs247.cas.psu.edu/iacucsur.htm>  
IACUCs: Celebrating 10 Years of Experience
- <http://www.nal.usda.gov/awic/pubs/oldbib/acuc.htm>  
Institutional Animal Care & Use Committees (AWIC Document)
- <http://www.apa.org/science/anguide.html>  
APA - Guidelines for Ethical Conduct In the Care and Use of Animals
- [gopher://gopher.vt.edu:70/0R26406-33534-lm/administration/healthsafe/animalrespol](http://gopher://gopher.vt.edu:70/0R26406-33534-lm/administration/healthsafe/animalrespol)  
IACUC - Virginia Tech
- <http://acuc.ag.uidaho.edu>  
University of Idaho IACUC
- <http://clacc.uchc.edu>  
Animal Care Committee - University of Connecticut
- <http://www.umt.edu/research/iacuc.htm>  
IACUC - University of Montana
- <http://cpmcnet.columbia.edu/dept/icm/>  
CPMCnet: Institute of Comparative Medicine - Columbia University
- <http://www.uark.edu/admin/rsspinfo/iacuc/iacuc.html>  
IACUC - University of Arkansas
- <http://www3.umdj.edu/~layne/vivarium.html>  
Vivarium Home Page - University of Medicine and Dentistry - New Jersey
- <http://omni.ucsb.edu/pro/acc-home.html>  
University of California, Santa Barbara, Office of Research, Animal Care Council

- <http://www.whitehouse.gov/WH/EOP/OMB/html/circulars/a021/a021.html>  
OMB Circular No. A-21 revised August 29, 1997  
(Cost Principles for Educational Institutions)
- <http://www.aamc.org/research/primr/arena/>  
ARENA - Applied Research Ethics National Association
- <http://www.umdj.edu/aris/rwjms.html>  
Robert Wood Johnson Medical School Research Office
- <http://www-med.stanford.edu/school/CompMed/index.html>  
Stanford University Department of Comparative Medicine
- <http://oslovet.veths.no/NORINA/>  
NORINA - Norwegian Inventory of Audiovisuals
- [http://duke.usask.ca/~ladd/vet\\_libraries.html](http://duke.usask.ca/~ladd/vet_libraries.html)  
Veterinary Medical Libraries Home Page
- <http://www.medvet.umontreal.ca/biblio>  
La Bibliotheque de Medecine Veterinaire  
(Universite de Montreal)
- <http://www.nal.usda.gov/awic/legislat/regspage.htm>  
USDA Animal Welfare Act
- <http://www.aphis.usda.gov>  
USDA Animal and Plant Health Inspection Service
- <http://www.ortge.ufl.edu/iacuc/>  
University of Florida IACUC
- <http://www.aalas.org/>  
AALAS-American Association for Laboratory Animal Science
- <http://www.nal.usda.gov/awic>  
AWIC-USDA-NAL Animal Welfare Information Center
- <http://phs.os.dhhs.gov/phs/phs.html>  
PHS - Public Health Service (Ed. note- This site is no longer being updated)
- <http://www.ncrr.nih.gov/>  
NCRR - National Center for Research Resources (NIH-USA)
- [http://www.access.gpo.gov/su\\_docs/aces/aces140.html](http://www.access.gpo.gov/su_docs/aces/aces140.html)  
Federal Register
- <http://www.legislate.com/>  
LEGI-SLATE Gopher Service
- <http://www.lib.lsu.edu/gov/fedgov.html>  
WWW Virtual Library: US Federal Government Agencies
- <http://www.cdc.gov/>  
CDC - Centers for Disease Control
- <http://www.aaalac.org/>  
AAALAC International
- <http://www.aclam.org/>  
ACLAM-American College of Laboratory Animal Medicine
- <http://www2.nas.edu/ilarhome/>  
ILAR - Institute for Laboratory Animal Resources
- <http://www.nabr.org/>  
NABR - National Association for Biomedical Research
- <http://www.nap.edu/readingroom/books/labrats/>  
Guide for the Care and Use of Laboratory Animals (1996 edition)
- <http://www.aamc.org/research/primr/>  
PRIM&R - Public Responsibility in Medicine and Research
- <http://www.sph.jhu.edu/~altweb/>  
Altweb - Johns Hopkins Center for Alternatives to Animal Testing ■

# Clarification

In *Animal Welfare Information Center Newsletter* Vol 8 #3-4 Winter 1997/1998, the article on page 1—"Alternatives to Ascites Production of Monoclonal Antibodies"—by John McArdle, Ph.D., contained two tables summarizing results adapted from other journal articles. Although the tables were presented as they appeared in the original articles, the results are difficult to interpret because of descriptive information that was not included. The following information is being presented to clarify this:

**Table 1. Antibody production in different bioreactor systems**

(Adapted from Stoll, T., Perregaux, C., Stockar, U. V., and I. W. Marison (1995). Production of immunoglobulin A in different reactor configurations. *Cytotechnology* 17:53-63.)

System	Maximum Concentration mg/l	Productivity mg/week	Required for the production of 1 g
<i>In vivo</i>	2,200	2	180 mice
<i>In vitro</i>			
T-flask	42	7	400 T-flasks
Stirred-tank bioreactor, batch	47	180 <sup>a</sup>	39 days
Stirred-tank bioreactor, fed-batch	120	250 <sup>a</sup>	28 days
Hollow fiber reactor	1,600	1,400	26; 5 days <sup>b</sup>
<sup>a</sup> The total cycle time (inoculation, culture, and cleaning) was taken into account.			
<sup>b</sup> First number is for first gram; second number is for second gram.			

It is important to realize that the maximum IgA concentration is per liter, therefore it is clear that while the *in vivo* system (mouse ascites) has a very high concentration of IgA (2200 mg/l), a yield of only about 2 ml of ascites fluid can be produced over a period of about 15 days per mouse slaughtered. (Ed note: The apparent discrepancy in the *in vivo* data is due to the length of time to produce antibodies via ascites. The authors primed the mice with Pristane, then inoculated the animals with cells 7 days later. After an 8 day incubation period, the mice were sacrificed and ascites fluid collected—it is normal practice in Switzerland to minimize mouse suffering by collecting fluid only once. In the study cited, an average of 2.5 ml of ascites fluid was collected, corresponding to about 5.5 mg IgA per mouse over the 15 day cycle time or about 2.5 mg/week. Thus it would require about 180 mice to produce 1 g of IgA in one week *following priming with Pristane*.

On the other hand, with batch STR (Stirred Tank Reactor) cultures (1.6 liter working volume) a maximum IgA concentration of 47 mg/l (total amount per 1.6 liter bioreactor = 75.2 mg) is obtained after about 60 hours. So about 180 mg of IgA may be obtained per bioreactor per week if one assumes that each culture is harvested after 60 hours and allowing for the turn around time of the bioreactors. Therefore, to get one gram using one 1.6 liter batch STR would require 39 days. Clearly one could use a bigger bioreactor provided mass transfer rates remain constant.

For hollow fiber reactors the concentration can be very high (1,600 mg/l) but this is only obtained after colonization of the cartridge and depends on harvesting frequency. With the system used (extracapillary space 300 ml) the maximum IgA concentration was achieved only after 25-- 26 days. However, based on the harvesting rate used and taking into account the time from inoculation of the cartridge, it would take 26 days to produce the first gram. But if the reactor is kept operating continuously it would only take a further 5 days to obtain the second gram. (Personal communication with Ian Marison, Ph.D.)

*Clarification cont'd on p.20*

Table 2. Comparisons of different monoclonal antibody production methods

(Adapted from Hendriksen, C., Rozing, J., Kamp, M., and W. de Leeuw (1996). The production of monoclonal antibodies: Are animals still needed? *ATLA* 24:109-110 and Kamp, M. and W. de Leeuw (1996). Short review of in vitro production methods for monoclonal antibodies. *NCA Newsletter* 3:10-11.)

Production System	Scale	Volume (ml)	Concentration (mg/ml)	Production Time (weeks) <sup>a</sup>	Estimated Cost, U.S.\$ (per gram)	Quality
Ascites (in vivo)	20-250mg	5-10	20	2-3	1,000-6,000	Low
Stir growth		100-2,500	0.01 - 0.1	2 - 3		High
Dialysis membrane	50mg	10-25	0.1 - 1.5	2 - 5		High
Roller bottles	2g	100-2,000	0.01 - 0.2	2 - 6	2,000-6,000	High
Hollow fiber	0.15-30g	25-1,000	0.2 - 30	3 - 12	2,700-4,000	High
Fermentor	2-100g	2,000 liters	0.05 - 0.5	2 - 12	1,000-6,000	High

<sup>a</sup> Excluding immunization, including up-scaling cell cultures.

## COMPASS

### (COMparative Adjuvant Selection System)

The Veterinary Public Health Inspectorate in Rijswijk, The Netherlands, and the National Institute of Public Health and the Environment (RIVM) in Bilthoven, The Netherlands, are planning to create a computer model, COMPASS, to make data on immunization experiments in laboratory animals generally available.

This computer model may serve as a tool to adequately select an adjuvant for immunization procedures in laboratory animals. Immunization experiments are routinely performed with Freund's complete adjuvant (FCA) because of its ability to induce immune responses. However, besides the intended stimulation of the immune response, FCA induces undesirable side effects. A general alternative to replace FCA, combining effective immune responses to different kinds of antigens with minimal side effects, is not available.

To feed the computer model, the creators need information such as what types of antigen are being used, the type of immune response required, the route of injection, and the animal species used. They have designed a questionnaire (downloadable or interactive), and they are kindly asking everyone working in this field to fill in this questionnaire.

The location of the questionnaire is:

<http://www.cc.ruu.nl/ewi-enare/compass/>

## CORRECTION

In AWIC Newsletter Vol 8 # 3-4 Winter 1997/1998, page 29:

The correct web address for the UC Center for Animal Alternatives at the University of California at Davis School of Veterinary Medicine is [http://www.vetmed.ucdavis.edu/Animal\\_Alternatives/main.htm](http://www.vetmed.ucdavis.edu/Animal_Alternatives/main.htm)

The correct web address for the site on "Blood collection in mice using the saphenous vein..." is [http://www.uib.no/vivariet/mou\\_blood/Blood\\_coll\\_mice\\_.html](http://www.uib.no/vivariet/mou_blood/Blood_coll_mice_.html)

## Legislation *cont'd from p.1*

trapped in a steel jaw leghold trap; (2) to import, export, deliver, carry, transport, or ship by any means whatever, in interstate commerce, any steel jaw leghold trap; or (3) to sell, receive, acquire, or purchase any steel jaw leghold trap that was delivered, carried, transported, or shipped in contravention of paragraph (2).

The Secretary of the Interior shall pay non-government informers who furnish information which lead to a conviction under this Act, an amount equal to one half of the fine paid pursuant to the conviction. Enforcement authorities may detain, search, and seize suspected merchandise or documents, if there is reasonable cause to suspect a violation to the Act has occurred. Any article of fur or steel jaw leghold trap taken, possessed, sold, purchased, offered for sale or purchase, transported, delivered, is subject to forfeiture. Related bill H.R. 1176.

- **H.R. 2162 To prohibit the reintroduction of grizzly bears into the Bitterroot Ecosystem in east central Idaho.**

Introduced on July 15, 1997, by Helen Chenoweth (R-Idaho) and referred to the Committee on Resources.

"None of the funds appropriated or otherwise made available to the Secretary of the Interior (including the United States Fish and Wildlife Service) may be used to develop, implement, or carry out any program for the reintroduction of grizzly bears (*Ursus horribilis*) into the Bitterroot Ecosystem in east central Idaho."

- **H.R. 3113 To reauthorize the Rhinoceros and Tiger Conservation Act of 1994.**

Introduced January 27, 1998, by Don Young (R-Alaska) and referred to the Committee on Resources. On March 19, 1998, committed to the Committee of the Whole House on the State of the Union and Report No. 105--455 ordered to be printed. This Act may be cited as the "Rhinoceros and Tiger Conservation Reauthorization Act of 1998."

Section 7 of the Rhinoceros and Tiger Conservation Act of 1994 (16 U.S.C. 5306) is amended by striking 'fiscal years' and all that follows through '2000' and inserting 'fiscal years 1998, 1999, 2000, 2001, 2002, 2003, and 2004.'

- **H.R. 2351 To amend the Endangered Species Act of 1973 to ensure the recovery of our Nation's declining biological diversity; to reaffirm and strengthen this Nation's commitment to protect wildlife; to safeguard our children's economic and ecological future; and to provide assurances to local governments, communities, and individuals in their planning and economic development efforts.**

Introduced July 31, 1997, by George Miller (D-California) and referred to the Committee on Resources, and the Committee on Ways and Means. This Act may be cited as the "Endangered Species Recovery Act of 1997."

The Congress finds and declares the following: (1) The American public recognizes the importance of protecting the natural environmental legacy of this Nation. (2) It is only through the protection of all species of plants and animals and the ecosystems upon which they depend that we will conserve

a world for our children with the spiritual, medicinal, agricultural, and economic benefits that plants and animals offer. Moreover, we have a moral responsibility not to drive other species to extinction. (3) We are rapidly proceeding in a manner that will deny a world of abundant, varied species to future generations. (4) Although the Endangered Species Act of 1973 has prevented the extinction of many animal, plant, and fish species, many of these species have not fully recovered and the Act must ensure their long-term survival and recovery. (5) Federal agencies and others should act to protect declining species before they need the full application of the Endangered Species Act of 1973. (6) All members of the public have a right to be involved in the decisions made to protect biodiversity. (7) To avoid extinction in the wild, habitats must be conserved by using the best available science. (8) Only by taking actions that implement the existing recovery goal of the Endangered Species Act of 1973 can we ensure that species will eventually be removed from the lists of endangered species and threatened species. (9) We can provide assurances for communities, local governments, and private landowners that will enable them to move forward with planning and economic development efforts while still protecting species.

- **S. 1180 To reauthorize the Endangered Species Act.**

Introduced on September 16, 1997, by Dirk Kempthorne (R-Idaho) and referred to the Committee on Environment and Public Works. This Act may be cited as the "Endangered Species Recovery Act of 1997."

Contents for this Act include: listing and delisting species; recovery planning; interagency consultation and cooperation; conservation plans; enforcement and education.

- **H. R. 2911 To amend the Endangered Species Act of 1973 to improve the ability of individuals and local, State, and Federal agencies to prevent natural flood disaster.**

Introduced November 7, 1997, by Richard W. Pombo (R-California) and referred to the Committee on Resources.

The purpose of this Act is to assist individuals and local, State, and Federal agencies in complying with the Endangered Species Act of 1973 in reconstructing or repairing of flood control levee structures to address imminent threats to public health or safety or catastrophic natural events and in maintaining the structural integrity of those structures.

Endangered Species Act of 1973 (16 U.S.C. 1536(a)) is amended by adding at the end the following new paragraph: '(5) Consultation and conferencing under paragraphs (2) and (4) is not required for any agency action that: '(A) consists of reconstruction or repair of a Federal or non-Federal levee structure to address a critical, imminent threat to public health or safety; or to address a catastrophic natural event; or consists of maintaining the structural integrity of a Federal or non-Federal levee structure.'

- **S. 1059 To amend the National Wildlife Refuge System Administration Act of 1966 to improve the management of the National Wildlife Refuge System, and for other purposes.**

Introduced on July 23, 1997, by John H. Chafee (R-Rhode Island) and referred to the Committee on Environment and Public Works.

The Congress finds the following: (1) The National Wildlife Refuge System is comprised of over 92,000,000 acres of Federal lands that have been incorporated within 509 individual units located in all 50 States and the territories of the United States. (2) The System was created to conserve fish, wildlife, and plants and their habitats and this conservation mission has been facilitated by providing Americans opportunities to participate in compatible wildlife--dependent recreation, including fishing and hunting, on System lands and to better appreciate the value of and need for fish and wildlife conservation. (3) The System serves a pivotal role in the conservation of migratory birds, anadromous and interjurisdictional fish, marine mammals, endangered and threatened species, and the habitats on which these species depend. (4) The System assists in the fulfillment of important international treaty obligations of the United States with regard to fish, wildlife, and plants and their habitats. (5) The System includes lands purchased not only through the use of tax dollars but also through the proceeds from sales of Duck Stamps and national wildlife refuge entrance fees. It is a System that is financially supported by those benefiting from and utilizing it. (6) When managed in accordance with principles of sound fish and wildlife management and administration, fishing, hunting, wildlife observation, and environmental education in national wildlife refuges have been and are expected to continue to be generally compatible uses. (7) On March 25, 1996, the President issued Executive Order 12996, which recognized 'compatible wildlife--dependent recreational uses involving hunting, fishing, wildlife observation and photography, and environmental education and interpretation as priority public uses of the Refuge System.' (8) Executive Order 12996 is a positive step and serves as the foundation for the permanent statutory changes made by this Act.

- **S. 1150 To ensure that federally funded agricultural research, extension, and education address high--priority concerns with national or multi state significance, to reform, extend, and eliminate certain agricultural research programs, and for other purposes.**

Introduced September 5, 1997, by Richard G. Lugar (R--Indiana) and referred to the Committee on Agriculture. Forwarded to the House of Representatives, on February 24, 1998, and passed with amendments. This Act may be cited as the "Agricultural Research, Extension, and Education Reauthorization Act of 1997."

Contents of this Act include sections on the following: priorities and management principles for federally supported and conducted agricultural research, education, and extension; relevance and merit of federally funded agricultural research, extension, and education; evaluation and assessment of agricultural research, extension, and education programs; plans of work to address critical research and extension issues and use of protocols to measure success of plans; plans of work for 1890 land--grant colleges to address critical research and extension issues and use of protocols to measure success of plans; and international research, extension, and teaching.

- **H.R. 3232 To amend the Federal Water Pollution Control Act to control water pollution from concentrated animal feeding operations, and for other purposes.**

Introduced February 12, 1998, by George Miller (D-California) and referred to the Committee on Transportation

and Infrastructure. This Act may be cited as the "Farm Sustainability and Animal Feedlot Enforcement Act."

Congress finds the following: (1) Discharges and runoff from concentrated animal feeding operations are a major source of water pollution in many watersheds; (2) An outbreak of cryptosporidium in Wisconsin, which killed more than 100 people, and outbreaks of *Pfiesteria piscicida* in the coastal waters of North Carolina and Maryland, which killed millions of fish and sickened dozens of people, have been linked to contaminants associated with animal feeding operations. (3) Current controls on water pollution from concentrated animal feeding operations are inadequate to control surface discharges and do not adequately protect ground water. (4) Additional controls on all forms of water pollution resulting from concentrated animal feeding operations are needed to protect the public health, water quality, and fisheries of the United States. (5) Alternatives to animal waste containment lagoons exist, and the use of these alternatives would better protect the public health and the waters of the United States from pollution.

The purposes of this Act are to protect the public health, water quality, and fisheries of the United States by establishing appropriate controls on water pollution from concentrated animal feeding operations. Sections included in this Act: permits; classes and numbers of animals; animal waste control; application of waste to land; and animal waste storage.

- **H. R. 3946 To establish, wherever feasible, guidelines, recommendations, and regulations that promote the regulatory acceptance of new and revised toxicological tests that protect human and animal health and the environment while reducing, refining, or replacing animal tests and ensuring human safety and product effectiveness.**

Introduced on May 22, 1998, by Tom Lantos (D-California) and referred to the Committee on Commerce. This act may be cited as the "ICCVAM Authorization Act of 1998."

## SEC. 2. INTERAGENCY COORDINATING COMMITTEE ON THE VALIDATION OF ALTERNATIVE METHODS.

(a) IN GENERAL-- The Interagency Coordinating Committee on the Validation of Alternative Methods (referred to in this Act as "ICCVAM") shall be sustained as a permanent standing committee and continued to be administered by the National Institute of Environmental Health Sciences. The purposes of ICCVAM shall be to--

- (1) increase the efficiency and effectiveness of Federal agency test method review;
- (2) eliminate duplicative efforts and share experiences across Federal regulatory agencies;
- (3) optimize utilization of scientific expertise outside the Federal Government;
- (4) ensure that new test methods meet the needs of Federal agencies; and
- (5) reduce, refine, and replace the use of animals in testing.

(b) COMPOSITION-- ICCVAM shall be comprised of a representative from each of the following agencies and organizations:

(1) Agency for Toxic Substances and Disease Registry. (2) Consumer Product Safety Commission. (3) Department of Agriculture. (4) Department of Defense. (5) Department of Energy. (6) Department of the Interior. (7) Department of Transportation. (8) Environmental Protection Agency. (9) Food and Drug Administration. (10) National Institute for Occupational Safety and Health. (11) National Institutes of Health. (12) National Cancer Institute. (13) National Institute of Environmental Health Sciences. (14) National Library of Medicine. (15) Occupational Safety and Health Administration. (16) Any other agency that develops, employs, or regulates the use of animals in toxicity testing.

**(c) SCIENTIFIC ADVISORY COMMITTEE--**

**(1) ESTABLISHMENT--** In addition, the National Institute of Environmental Health Sciences shall establish a Scientific Advisory Committee to assist ICCVAM and the National Institute of Environmental Health Sciences. The Committee shall be composed of at least one knowledgeable representative having a history of expertise, development, or evaluation in alternatives to animal toxicological tests, from each of the following interests:

(A) The personal care, pharmaceutical, industrial chemicals, agriculture, and any other regulated industry.

(B) A national animal protection organization established under section 501(c)(3) of the Internal Revenue Code of 1986.

**(2) MEMBERSHIP--** The National Institute of Environmental Health Sciences shall also invite to be members of the Scientific Advisory Committee representatives from other stakeholder organizations such as:

(A) An academic institution.

(B) A State government agency.

(C) An international regulatory body.

(D) A corporation developing or marketing alternative test methodologies including contract laboratories.

**(d) DUTIES--** ICCVAM shall carry out the following duties consistent with the protection of public health and the environment and for the purpose of reducing, refining, and replacing the use of animals in acute and chronic toxicological tests:

(1) Review and evaluate existing and new alternative methods, including batteries of tests and test screens, which may be acceptable for specific regulatory uses, including the coordination of technical reviews of proposed new or revised test methods of interagency interest.

(2) Facilitate interagency and international harmonization of acute chronic toxicological test protocols that encourage the reduction, refinement, or replacement of animal tests.

(3) Facilitate, promote, and provide guidance on development of validation criteria and processes for new methods and help promote the acceptance of such methods and awareness of accepted methods by Federal agencies and other stakeholders.

(4) File formal recommendations with each appropriate Federal agency identifying specific agency guidelines, recommendations, or regulations for each new test, battery of tests, test screen, or end point reviewed by ICCVAM that may be appropriate for the reduction, refinement, or replacement of an animal test required or recommended by that Federal agency for compliance with that agency's specific statutes, regulations, or guidelines. Tests may be recommended for a certain class of chemicals within that regulatory framework.

(5) Consider for review and evaluation, petitions received from the public which identify a specific regulation, recommendation, or guideline, and which recommend alternatives and provide scientific evidence of the acceptability of the alternatives for the purpose of carrying out the regulatory mandate in question.

(6) Make final recommendations to agencies and responses from agencies available to the public.

(7) Make an annual report to be made available to the public on its progress to promote the regulatory acceptance of new and revised toxicological tests.

**SEC. 3. APPLICATION.**

This Act shall not apply to regulations, guidelines, or recommendations related to medical research. The term 'medical research' means research, including research performed using biotechnology, related to the causes, diagnosis, treatment, or control of physical or mental impairments of humans or animals. The term does not include the testing of a product to determine its toxicity for the purpose of complying with protocols, recommendations, or guidelines for testing required, recommended, or accepted by a Federal regulatory agency for a product introduced in commerce.

**SEC. 4. FEDERAL AGENCY ACTION.**

**(a) IDENTIFICATION OF TESTS--** Within 180 days after the date of enactment of this Act, each Federal agency authorized to carry out a regulatory program which requires or recommends acute or chronic toxicological testing shall identify any regulation or industry-wide guideline which specifically, or in practice requires, recommends, or encourages the use of an animal acute or chronic toxicological test and shall forward to ICCVAM a list of these regulations, guidelines, and recommendations along with the test or tests recommended or required.

**(b) ALTERNATIVES--** Each Federal agency shall promote and encourage the development and use of alternatives to animal tests, including batteries of tests and test screens, where appropriate, for the purpose of complying with Federal regulations, guidelines, or recommendations, in each instance, and for each chemical class, for which such tests are found to be effective for generating data at least equivalent for hazard identification or dose-response assessment purposes to the method established under the current regulatory scheme.

**(c) TEST VALIDATION--** Each Federal agency shall ensure that any new acute or chronic toxicity test, including animal tests and alternatives, is determined to be valid for its proposed use prior to requiring, recommending, or encouraging its application.

**(d) REVIEWS--** Each Federal agency shall review any formal recommendations from ICCVAM to promulgate new regulations or draft new guidelines or recommendations to promote the ICCVAM recommendations and notify ICCVAM in writing of its findings within 180 days of receipt of the recommendations.

**(e) RECOMMENDATION ADOPTION--** Each Federal agency shall adopt the ICCVAM recommendations unless it determines that--

(1) the alternative is not adequate in terms of biological relevance for the regulatory goal authorized by the agency;

(2) the alternative does not generate data at least equivalent for the appropriate hazard identification or dose-response assessment purpose as the method recommended by the agency;

(3) the agency does not employ, recommend, or require testing for that class of chemical or for the recommended end point; or

(4) each government agency retains fully the prerogative of deciding whether the new test method is acceptable for satisfactorily fulfilling the test needs for their particular agency and its respective congressional mandate.

- **S. 2202 To amend the Animal Welfare Act to ensure that all dogs and cats used by research facilities are obtained legally.**

Introduced June 23, 1998, by Daniel Akaka (D-Hawaii) and read twice and referred to the Committee on Agriculture, Nutrition, and Forestry. This act may be cited as the "Pet Safety and Protection Act of 1998."

#### SEC. 2. PROTECTION OF PETS.

(a) RESEARCH FACILITIES-- Section 7 of the Animal Welfare Act (7 U.S.C. 2137) is amended to read as follows:

#### SEC. 7. SOURCES OF DOGS AND CATS FOR RESEARCH FACILITIES.

(a) DEFINITION OF PERSON-- In this section, the term person' means any individual, partnership, firm, joint stock company, corporation, association, trust, estate, pound, shelter, or other legal entity.

(b) USE OF DOGS AND CATS-- No research facility or Federal research facility may use a dog or cat for research or educational purposes if the dog or cat was obtained from a person other than a person described in subsection (d).

(c) SELLING, DONATING, OR OFFERING DOGS AND CATS-- No person, other than a person described in subsection (d), may sell, donate, or offer a dog or cat to any research facility or Federal research facility.

(d) PERMISSIBLE SOURCES-- A person from whom a research facility or a Federal research facility may obtain a dog or cat for research or educational purposes under subsection (b), and a person who may sell, donate, or offer a dog or cat to a research facility or a Federal research facility under subsection (c), shall be---

(1) a dealer licensed under section 3 that has bred and raised the dog or cat;

(2) a publicly owned and operated pound or shelter that--

(A) is registered with the Department of Agriculture;

(B) is in compliance with section 28(a)(1) and with the requirements for dealers in subsections (b) and (c) of section 28; and

(C) obtained the dog or cat from its legal owner, other than a pound or shelter;

(3) a person that is donating the dog or cat and that---

(A) bred and raised the dog or cat; or

(B) owned the dog or cat for not less than 1 year immediately preceding the donation;

(4) a research facility licensed by the Department of Agriculture; and

(5) a Federal research facility licensed by the Department of Agriculture.

#### (e) PENALTIES--

(1) IN GENERAL-- A person that violates this section shall pay \$1000 for each violation.

(2) ADDITIONAL PENALTY-- A penalty under this subsection shall be in addition to any other applicable penalty and shall be imposed whether or not the Secretary imposes any other penalty.

(f) NO REQUIRED SALE OR DONATION-- Nothing in this section requires a pound or shelter to sell, donate, or offer a dog or cat to a research facility or Federal research facility.'

(b) FEDERAL RESEARCH FACILITIES-- Section 8 of the Animal Welfare Act (7 U.S.C. 2138) is amended---

(1) by striking No department' and inserting Except as provided in section 7, no department';

(2) by striking research or experimentation or'; and

(3) by striking such purposes' and inserting that purpose'.

(c) CERTIFICATION-- Section 28(b)(1) of the Animal Welfare Act (7 U.S.C. 2158(b)(1)) is amended by striking individual or entity' and inserting research facility or Federal research facility'.

#### SEC. 3. EFFECTIVE DATE.

The amendments made by section 2 take effect 90 days after the date of enactment of this Act.

- **H. CON. RES. 286 Expressing the sense of the Congress regarding the link between violence against animals and violence against humans and urging greater emphasis upon identifying and treating individuals who are guilty of violence against animals, which is a crime in its own right in all 50 States, in order to prevent violence against humans and urging research to increase understanding of the connection between cruelty to animals and violence against humans.**

Introduced June 3, 1998, by Tom Lantos (D-California) and referred to the Committee on Commerce and the Committees on Agriculture and the Judiciary.

Be it resolved by the House of Representatives (the Senate concurring), that the Congress: (1) recognizes that individuals who abuse animals are more likely to commit more serious violent crimes against humans; (2) urges social workers, teachers, mental health professionals, and others to be aware of the connection between animal cruelty and human violence and to evaluate carefully and to monitor closely individuals who have a history of abusing animals because this may indicate a propensity to commit violence against other humans; (3) urges appropriate Federal agencies to encourage and support research to increase the understanding of the connection between cruelty to animals and violence against humans in order to utilize instances of animal abuse to identify and intervene with potentially violent individuals, and urges Federal agencies which are undertaking research on violent crime and its causes to incorporate examination of the link between violence against animals and violence against humans; (4) urges local law enforcement officials to treat cases of animal cruelty seriously both because such cruelty is a crime in its own right in all 50 States and because it is a reliable indicator of the potential for domestic and other forms of violence against humans; and (5) commends the fine work of local animal control officials and humane investigators who enforce laws against animal abuse and urges these professionals to work more closely with local law enforcement personnel to identify and prevent potential violence against humans.

- **H.R. 2807 To amend the Rhinoceros and Tiger Conservation Act of 1994 to prohibit the sale, importation, and exportation of products labeled as containing substances derived from rhinoceros or tiger.**

Introduced April 29, 1998, by Jim Saxton (R-New Jersey) and referred to the Committee on Environment and Public Works. This act may be cited as the "Rhino and Tiger Product Labeling Act."

Congress finds: (1) The populations of several magnificent and unique endangered species of rhinoceros and tigers, such as the Indian rhinoceros, the Javan rhinoceros, the African black rhinoceros, and all of the tiger subspecies, continue to decline. (2) Growing demand throughout the world for wildlife and wildlife parts and products has created a market in which commercial exploitation has threatened certain rhinoceros and tiger populations. (3) There are insufficient legal mechanisms enabling the United States Fish and Wildlife Service to forcefully interdict products that are labeled as containing substances derived from rhinoceros or tiger species and prosecute the merchandisers for sale or display of those products. (4) Although approximately 77,000 import and export shipments occur annually in the United States, the United States Fish and Wildlife Service is able to maintain only 92 wildlife inspectors at 30 ports of entry, including 13 designated ports, to monitor the shipments. (5) Wildlife inspectors are able to physically inspect only an estimated 5 to 10 percent of all import and export shipments, making the rate of detection of contraband wildlife products extremely low. (6) Alternatives are available to the traditional medicinal products that contain substances derived from rhinoceros and tiger species.

(7) Public education initiatives directed toward traditional user groups on the endangered status of rhinoceros and tiger species and on the availability of alternative products in traditional medicine have proven useful in reducing the demand for products labeled as containing substances derived from rhinoceros and tiger species, and should be encouraged.

No person shall sell, import, or export, or attempt to sell, import, or export any product, item, or substance intended for human consumption containing or purporting to contain any substance derived from any species of rhinoceros or tiger.

- **S. 2199 To amend the Marine Mammal Protection Act of 1972 to establish a Marine Mammal Rescue Grant Program, and for other purposes.**

Introduced on June 22, 1998, by Robert Torricelli (D-New Jersey) and referred to the Committee on Commerce, Science, and Transportation.

Title IV of the Marine Mammal Protection Act of 1972 (16 U.S.C. 1371 et seq.) is amended: (1) by redesignating sections 408 and 409 as sections 409 and 410, respectively; and (2) by inserting after section 407 the following: Subject to the availability of appropriations, the Secretary of Commerce, shall conduct a grant program to be known as the Marine Mammal Rescue Grant Program, to provide grants to eligible stranding centers and eligible stranding network participants for the recovery or treatment of marine mammals and the collection of health information relating to marine mammals. The amount of a grant awarded under this section shall not exceed \$100,000.

- **S. 2172 To authorize the National Fish and Wildlife Foundation to establish a whale conservation fund, and for other purposes.**

Introduced June 16, 1998, Judd Gregg (R-New Hampshire) and referred to the Committee on Commerce, Science, and Transportation. This act may be cited as the "National Whale Conservation Fund Act of 1998."

Congress finds that: (1) the populations of whales that occur in waters of the United States are resources of substantial ecological, scientific, socioeconomic, and esthetic value; (2) whale populations form a significant component of marine ecosystems; are the subject of intense research; and provide for a

multimillion dollar whale watching tourist industry that provides the public an opportunity to enjoy and learn about great whales and the ecosystems of which the whales are a part.

Section 4 of the National Fish and Wildlife Establishment Act (16 U.S.C. 3703) is amended by adding at the end the following: (f)(1) In carrying out the purposes under section 2(b), the Foundation may establish a national whale conservation endowment fund, to be used by the Foundation to support research, management activities, or educational programs that contribute to the protection, conservation, or recovery of whale populations in waters of the United States.

- **H.R. 3911 To designate all unreserved and unappropriated California coastal rocks and islands currently administered by the Bureau of Land Management as a component of the National Wilderness Preservation System.**

Introduced on May 20, 1998, by Sam Farr (D-California) and referred to the Committee on Resources. This act may be cited as the "California Coastal Rocks and Islands Wilderness Act of 1998."

The Congress finds the following: (1) The California coastal rocks and islands are a critical component of a unique ecosystem of California. (2) The California coastal rocks and islands comprise a narrow flight lane in the Pacific Flyway, providing protected nest sites as well as feeding and perching areas for millions of seabirds. (3) This unique ecosystem is also important for the continued survival of endangered or threatened sea mammals, such as stellar sea lions and elephant seals. (4) Designation of the California coastal rocks and islands as wilderness would add a significant natural component to the National Wilderness Preservation System.

- **S. 1970 To require the Secretary of the Interior to establish a program to provide assistance in the conservation of neotropical migratory birds.**

Introduced April 22, 1998, by Spencer Abraham (R-Michigan) and referred to the Committee on Environment and Public Works. Report number 105--284 issued.

The purposes of this Act are: (1) to assist in the conservation of neotropical migratory birds by supporting neotropical migratory bird conservation programs in Latin America and the Caribbean Latin America, the Caribbean, and the United States with a focus on reversing habitat loss and degradation; (2) to promote partnerships between Federal, State, and nongovernmental entities in the United States in the conservation of neotropical migratory birds; (3) to foster active governmental and nongovernmental participation in neotropical migratory bird conservation by cooperating countries throughout Latin America and the Caribbean; (4) to promote circumstances under which the conservation of neotropical migratory birds in Latin America and the Caribbean may be carried out entirely by local entities; (5) to provide financial resources for projects that support neotropical migratory bird conservation; and (6) to promote the effective conservation of neotropical migratory birds in the Western Hemisphere through collaboration at all levels of society. ■

# Announcements...

## Workshops and Conferences

- **IACUC Responsibility for Research Animal Well-being**

The Scientists Center for Animal Welfare (SCAW), the Office for Protection from Research Risks (OPRR), NIH, and the University of Texas Health Science Center at San Antonio will present a conference on December 7-8, 1998. The conference will be held in San Antonio, Texas. It will cover Federal policies, disaster planning, ethical cost-benefit assessment, occupational safety, environmental enrichment, field research, the roles of nonaffiliated members, review programs, and training. For more information, contact SCAW, 7833 Walker Dr., Suite 340, Greenbelt, MD 20770, phone: (301) 345-3500, fax: (301) 345-3503, e-mail: scaw@erols.com

- **International Conference on the Use of Humane Endpoints in Animal Experiments for Biomedical Research**

This conference is sponsored by the European Center for the Validation of Alternative Methods (ECVAM) working group on humane endpoints and the Rijksinstituut voor Volksgezondheid en Milieu (RIVM-National Institute of Public Health and the Environment) in The Netherlands. It will be held at the Hotel Figi in Zeist, The Netherlands on November 23-25, 1998.

There are moral, legal, social, and economic reasons for implementing humane endpoints in animal experimentation where animal well-being may be compromised, such as medical research, toxicity testing, and studies on infection including vaccine quality control. The purpose of this conference is to bring together people with expertise in these areas to present their latest research results with an emphasis on practical implications. Important issues relating to recognition and assessment of adverse effects in animals, and determination, validation, implementation, and acceptance of humane endpoints will be addressed. New techniques, new approaches, and new strategies using noninvasive methods will be discussed, as will training of observers, and use of recently developed remote-sensing devices.

For additional information, contact C.F.M. Hendriksen or B. Steen, RIVM, Central Animal Laboratories, P.O. Box 1, 3720 BA Bilthoven, The Netherlands, phone: +31 30 274 2503/2377, fax: +31 30 274 4408, e-mail: bjorn.steen@rivm.nl

## Awards

- **American College of Laboratory Animal Medicine Foundation Grants News**

The Foundation Committee members want to thank every diplomate that passed along the foundation's request for proposals (RFP) to researchers or who applied for this first cycle of Foundation Research Grants. We are pleased to announce the funding of three research grants totaling \$40,000:

ELISA-based Monitoring and Epidemiology of *Helicobacter hepaticus* Infection in Mouse Colonies submitted by Mark T. Whary, D.V.M., Ph.D., and James G. Fox, D.V.M., MS, Massachusetts Institute of Technology, Budget - \$15,000. This research project aims to validate a fecal-based IgA ELISA for diagnostic surveillance of *H. hepaticus* infec-

tion in mouse colonies. Secondly, it aims to define the epidemiology of *H. hepaticus* transmission in mice.

Stress Produced by Gavage Administration in the Rat submitted by Barry S. Levine, D.Sc., DABT, University of Illinois at Chicago, Budget - \$15,000. This project will examine the maximum dose volume that can be administered by gavage to rats without causing aspiration and the relationship between dose volume and elicitation of stress. Various vehicles used in toxicology studies, for example, water, corn oil, and 1% aqueous methylcellulose/0.2% Tween 80, will be examined for oral tolerability. A volume-response relationship will be determined for oral tolerability and elicitation of stress for each vehicle.

Development and Evaluation of Diagnostic Assays for Newly Recognized Rodent Parvoviruses submitted by David G. Besselsen, D.V.M., Ph.D., University of Arizona, Budget - \$10,000. The research objectives are to evaluate the serologic assays currently used for mouse parvovirus diagnosis with sera obtained from experimentally inoculated adult mice. Secondly, the project will develop a hemagglutination inhibition assay specific for rat parvovirus 1.

## Resources

- **Anatomic Gift Foundation Inc. (AGF) - Human Organs and Tissues for Research**

AGF, a nonprofit organization, provides human tissue specimens prepared according to individual specifications for medical research, education, and development of transplant therapies.

*How Do I Obtain Human Tissue Specimens?*

The process is as easy as 1, 2, 3

1. **Application**

- Request application materials
- Obtain Institutional Review Board (IRB) approval from your institution for your protocol.
- Complete and submit the application and agreement.

You may call the Anatomic Gift Foundation to request an application. The application can be sent to you via facsimile or mailed. The application facilitates documentation of certain necessary information, such as specifications of tissue procurement and preservation methods desired, donor inclusion and exclusion criteria, medical history information needed, proposed use of the tissue, IRB approval, funding, shipping and billing information. It is important to be specific.

2. **Review and creation of individualized protocol.**

- Completed applications are submitted to the AGF review panel.
- Approval is based on scientific merit and feasibility.
- Applicants are notified of status: approval vs. additional information required, etc.
- Individualized protocols are developed for approved applicants.

3. **Preparation and shipment of tissue per protocol specifications.**

\*AGF coordinators facilitate procurement of tissue per your protocol.

- AGF coordinators procure requested tissues and provide serologic status.

- You may request the form of shipment desired; overnight or same day.
- Frozen specimens can be stored.

Tissue specimens are recovered by AGF tissue bank staff, surgeons, coordinators, or other qualified tissue bank specialists from around the country. Tissues are prepared fresh, frozen, or fixed per your protocol. Frozen tissues can be stored for teaching courses for up to 2 months at a time at no extra charge. A nominal fee may be incurred after 2 months. Additional preparation can be done at an AGF lab per request.

For additional information, contact AGF, 96 Satilla Drive, White Oak, GA 31568, phone: (912) 576-5889, fax: (912) 576-3727, e-mail: agf@idt.net or in Laurel, MD, phone: (301) 953-2655, fax: (301) 953-2701, or in Phoenix, AZ, phone: (602) 528-3715, fax: (602) 528-3717.

#### • **AAALAC's Independent Evaluation of Animal Care Programs**

Institutions that use animals in research, teaching, or testing can now receive an expert, independent evaluation of their animal care and use programs through AAALAC International (the Association for Assessment and Accreditation of Laboratory Animal Care International). The new service is called a Program Status Evaluation and allows institutions to better assess the quality of all aspects of their animal research programs, including animal husbandry, veterinary care, institutional policies, and the facilities where animals are housed and used.

Because good science demands quality animal care, the evaluation will not only promote the well-being of laboratory animals, it will help validate the results of research using animals. It can also serve as the first step toward achieving AAALAC accreditation, a distinction earned by more than 620 universities, companies, hospitals, and other research facilities in 10 countries that have achieved excellence in animal care and use.

A program status evaluation allows institutions to determine where they stand in terms of meeting AAALAC standards, which are based on the principles outlined in the widely recognized *Guide for the Care and Use of Laboratory Animals* (National Research Council 1996). The evaluation also helps institutions gain a better understanding of the accreditation process before they officially apply.

Although entirely separate from AAALAC's traditional accreditation program, a program status evaluation is similar in procedure. To participate, institutions request an application package from the AAALAC office. The application process includes developing a comprehensive program description of the institution's entire animal care and use operation. This involves conducting an intensive self-assessment, which identifies strengths and weaknesses, raises internal awareness of issues surrounding animal well-being, and helps institutions understand exactly what is involved in achieving accreditation.

After the application form and program description are completed and returned to the AAALAC office, an onsite evaluation is scheduled. Evaluation teams are led by AAALAC Associate Director, Kathryn A. Bayne, M.S., Ph.D., D.V.M., a Diplomate of the American College of Laboratory Animal Medicine. Teams also include former members of AAALAC's Council on Accreditation—individuals who are expert in the fields of veterinary medicine, laboratory animal science, or animal research, and are committed to humane animal care and

use in science. The onsite evaluation team provides specific guidance on how to improve deficient program areas. Recommendations are provided in writing after the visit.

Institutions that complete the program status evaluation process and find they meet AAALAC standards can resubmit an updated program description for entry into the accreditation program. A new team of current council members and consultants will then conduct the actual accreditation site visit. The team's evaluation will be reviewed and deliberated by the full council, which will determine official accreditation status. Fees for program status evaluations are based on the direct cost of conducting the site visit and administrative expenses. Those that complete the program status evaluation and decide to pursue accreditation will be charged a reduced application fee.

To receive more information on AAALAC's program status evaluation service or an application, phone: 1-(800) 926-0066, (301) 231-5353, e-mail: accredit@aaalac.org

#### • **Canadian Centre for Alternatives to Animals in Research (CCAAR)**

The greatest numbers of animals used in Canadian science are, by far, involved in biomedical research. As part of new CCAC (Canadian Council on Animal Care) guidelines on animal use protocol review, researchers are asked to provide assurances that the possibilities for reduction, refinement, and replacement alternatives have been considered.

For procedures that cannot at present be replaced, it is important to ensure that they are carried out in such a manner as to minimize pain and distress caused to the animals involved. In order to establish best practice and to encourage implementation of refinement alternatives, there is a need for the sharing of experience, data, and procedures. A refinement database is a practical way to provide investigators and animal care personnel with the information necessary to modify research protocols to minimize animal suffering.

The new CCAAR has made a commitment to establish a refinement database. CCAAR believes that this will encourage development of refinement techniques as, at present, there is no readily available up-to-date knowledge base on refinement. The refinement database will both record refinements made to procedures and provide information on the best practices available. It will be aimed at establishing humane endpoints to animals experiments, analgesia, selection of species/model, environmental enrichment strategies, etc.

CCAAR is contacting institutions and individuals for assistance in establishing this database. Investigators and animal care personnel are encouraged to donate refinement procedures that will be available for release to interested parties. Donors will be given the opportunity to remain anonymous or to make themselves available as experts to provide additional information to users of the database.

Refinement method need not be published. In fact, many refinements are not reported in the literature because they are considered to constitute relatively minor changes in methodology. In particular, environmental enrichment strategies receive little scientific evaluation.

The long-term goal is for the database to be online, with an interactive bulletin board/discussion group to enable modifications to be reported and discussed before formal publication. Also, once established, the database could be linked to other databases in a federation that is being organized in the United States and would provide an international service.

We look forward to your participation in this essential and worthwhile project. If you have any questions about the database or the Centre, please contact Gilly Griffin, Ph.D., CCAAR, University of Ottawa, Faculty of Health Sciences, Office of the Dean, 451 Smyth Road, Room 3028, Ottawa, Ontario, K1H 8M5 Canada, phone: (613) 562-5800 ext. 8051, fax: (613) 562-5627.

- **Anesthesia of Rats CD-ROM**

*Anaesthesia of Rats: the Interactive Training and Teaching Tool* on CD-ROM is an alternative to use of research animals in teaching anesthesiology. Users learn about premedication, effects of anesthesia, and use of the agents by carrying out virtual experiments, examining the animal's condition in realistic video sequences, and checking the animal's physiological reactions in different phases of anesthesia. The disk is available for U.S. \$225/ Nlg (Dutch guilders) 450 from Bohn Stafleu Van Loghum, Postbus 246, 3990 GA Houten, The Netherlands, phone: +31 30 639-5711, fax: +31 30 635-0903, e-mail: rats@bslpub.com, <http://www.bslpub.com/rats>

- **Interactive Physiology Laboratory for Students**

The Biopac Student Lab is a hardware and software system with documentation that guides students through a set of lessons that illustrate physiological principles. Up to 15 labs cover topics including muscle contraction, lung capacity, electro-oculogram, biofeedback, and cardiac activity. Students attach electrodes and transducers to themselves and collect data using a menu-driven system. The system does data collection and analysis. It is also upgradable for research in human and animal studies. For more information, contact BIOPAC Systems, Inc., 275 South Orange Ave., Santa Barbara, CA 93117, phone: (805) 967-6615, fax: (805) 967-6043.

- **3-D Anatomy Models**

Virtual anatomy models based on the National Library of Medicine's Visible Human Project are available from Visible Productions, 116 North College Ave., Fort Collins, CO 80524, phone: (800) 685-4668, fax: (970) 407-7248, e-mail: visiblep@aol.com, <http://www.visiblep.com/VP3Danat.html>

## Available on the World Wide Web

- **AltaVista Translation Service**

<http://babelfish.altavista.digital.com/cgi-bin/translate?>

You can now translate your webpage text or ASCII text from English to French, German, Italian, Spanish, and Portuguese or vice versa using this AltaVista site.

- **Animals in Science/Minnesota Branch of the American Association for Laboratory Animal Science**

<http://www.ahc.umn.edu/rar/MNAALAS>

This site, hosted by the University of Minnesota, is an excellent source of information for kids (kindergarten to 12th grade) on how animals are used and cared for in research. Be sure to check out the equally useful pages of the University of Minnesota's Research Animal Resources at <http://www.ahc.umn.edu/rar/>

- **The Animals (Scientific Procedures) Inspectorate**

<http://www.homeoffice.gov.uk:80/asp/leaf.htm>

Contains the United Kingdom's Home Office documents regulating all vertebrate animal (and octopus) research. The site includes the full text of the 1986 Scientific Procedures Act, forms and guidance notes, and codes of practice. The codes of practice cover humane killing, and housing and care of animals during research and at breeding and supply establishments.

- **Animal Law**

<http://www.animal-law.com>

This site is designed by Boise, Idaho, attorney Matt Howard. It contains links to animal law organizations, animal welfare legislation and policies, Government agencies, Federal and Idaho law, legal research sites, and wildlife law sites.

- **Center for Research Animal Resources (CRAR)**

<http://web.vet.cornell.edu/crar/>

A Cornell University site that contains IACUC protocol forms, animal adoption and loan forms, links to additional information, and CRAR newsletters.

- **European Information Association**

[http://www.hull.ac.uk:80/php/Ibsebd/eia\\_html/access1.htm](http://www.hull.ac.uk:80/php/Ibsebd/eia_html/access1.htm)

The European Information Association lists a selection of key sites on the Internet providing European Union (EU) and related information. There are links to EU institutions, policies, political agenda, publications, contacts, treaties, and bibliographies.

- **Florida State University Laboratory Animal Program**

<http://www.fsu.edu/~FSULAR/framea.html>

An excellent site that provides an example of the responsibilities and missions of a laboratory animal program at a large multi-disciplinary research facility. Includes a discussion of how FSU expects its researchers to meet U.S. Department of Agriculture regulations on alternatives and duplication of research.

- **Fund for the Replacement of Animals in Medical Experiments (FRAME)**

<http://www.frame-uk.demon.co.uk>

FRAME, a United Kingdom (UK) organization that researches alternatives to animal testing, has a website with sections about UK legislation, FRAME activities, publications, an overview of alternatives, and the latest news.

- **Grupo de Trabajo Especializado en Métodos Alternativos (GTEMA)-Spanish Group on Alternative Methods**

<http://tox.umh.es/aet/gtema>

This site contains general information about GTEMA, including publications, links to alternative databases, meetings, validation activities, etc. Presented in Spanish with an English summary page.

- **Sample Documents and Tutorial for Implementation of the PHS Policy on Humane Care and Use of Laboratory Animals**

<http://www.nih.gov:80/grants/oprr/sampledoc/index.htm>

OPRR (Office for Protection from Research Risks) has been working over the past year to develop a web-based tutorial on the PHS Policy on Humane Care and Use of Labora-

tory Animals, and other documents to aid institutions in implementing the PHS Policy. These documents include a sample Animal Welfare Assurance, sample semiannual program review checklist, sample Annual Report to OPRR, and semiannual program and facility review checklist.

- **Searching for Animal Welfare Information (Alternatives)**

<http://www.welch.jhu.edu/help/guides/dbs.animal.html>

A site produced by Welch Medical Library at Johns Hopkins University School of Medicine. Provides an overview of searching for alternatives and lists several databases that should be consulted.

- **Sources of Information About Alternatives**

<http://omni.ucsb.edu/pro/alternvs.html>

Another overview of developing strategies for searching databases for alternatives information. Produced by University of California at Santa Barbara, Office of Research.

- **Zoonotic Diseases**

<http://omni.ucsb.edu/pro/policy.html>

From the University of California, Santa Barbara Office of Research, this site covers infection control in the laboratory and animal facility, the role of the facility director, diseases listed by animal reservoir, and disease links listed by disease. ■

## **Pain Management and Humane Endpoints Workshop**

November 2-3, 1998

National Academy of Sciences Auditorium,  
2101 C Street, NW, Washington, DC

Presented by

- The Johns Hopkins Center for Alternatives to Animal Testing,
- The National Institutes of Health Office for Animal Care and Use,
- The National Institutes of Health Office for Protection from Research Risks, and
- The National Academy of Sciences Institute for Laboratory Animal Research

The workshop will focus on the science, ethics, assessment and alleviation of pain, stress, and distress in animals involved in research.

For further information contact:

Workshop Coordinator  
Johns Hopkins University,  
Center for Alternatives to Animal Testing  
111 Market Place, Suite 840  
Baltimore, MD 21202-6709  
Phone: (410) 233-1617  
Fax: (410) 233-1603  
e-mail: [mprincip@caat.jhsph.edu](mailto:mprincip@caat.jhsph.edu) ■



# **Third World Congress on Alternatives and Animal Use in the Life Sciences**

*Bologna, Italy -- August 29 -- September 2, 1999*

## **Scope of the Congress**

The aim of the Congress will be to promote the exchange of information on the application of alternatives to laboratory animal procedures, that is replacement alternatives, reduction alternatives, and refinement alternatives, the Three R's of Russell & Burch, in biomedical research, education, and testing.

The scientific program will include plenary lectures, parallel platform sessions, workshops, point/counterpoint discussions, and poster and video demonstrations.

The planning scientific program will be strongly influenced by the First World Congress (Baltimore 1993) and the Second World Congress (Utrecht 1996). Nevertheless, early suggestions for innovative changes will be welcomed.

## **Congress Venue**

The Third World Congress will be held in the Palazzo della Cultura e dei Congressi, which is located at the heart of one of the most important trade fair complexes in Europe, but is only a few minutes away from the historic center of the city of Bologna.

## **Transport**

Bologna's Guglielmo Marconi Airport has direct links within Europe with Barcelona, Brussels, Frankfurt, Lyon, Lisbon, London, Madrid, Munich, Nice, Oporto, Paris, Vienna, and Zurich, and with the rest of the world via the intercontinental airports of Milan and Rome.

The Eurocity train service links Bologna with more than 40 other European cities.

Bologna is a major intersection for Italy's extensive motorway network. Public transport within the city is excellent and includes a direct bus service from the airport to the Congress venue.

## **Social Program**

A Congress Banquet will be held in the Palazzo Albergati, a stately home made famous by a series of dramatic frescos typical of the Emilian School of the 17th and 18th centuries. People accompanying participants will be able to take day trips to Florence and Venice.

Further information can be obtained from European Commission, Joint Research Centre, Public Relations and Publications Unit, 21020 Ispra (VA), Italy, phone: +39 332 789889, fax: +39 332 782435, e-mail: [prp@jrc.it](mailto:prp@jrc.it) ■

# PorkNet

## [http:// www.porknet.com/](http://www.porknet.com/)

by  
Tom Stein, D.V.M., M.S., Ph.D.  
Knowledgeworks, Inc.

**L**ike most of agriculture, the pork industry's biggest information challenge is too much information, too disorganized, and too hard to find. It simply takes too much time to find good, solid, useful information.

Our goal is to change information frustration into an "information epiphany" (to paraphrase Joseph Campbell) by creating one-stop information shopping for anyone participating in or interested in the pork industry. Our promise is that you will find whatever you're looking for at this site. If it's not there, we will find it, get it, and put it online.

You'll find five sections available now, with more to come

1. What's New / Industry News
2. SmartPork Reference Library
3. Discussion Forums
4. What's Coming
5. Web Links

PorkNet's key driver is the SmartPork Reference Library. It's our proprietary knowledgebase, about 30,000 articles, on pork production, industry analysis, market analysis, management, etc.

We've included over 1,200 sources to build this database, and we update it weekly.

Sources include:

- Scientific literature (over 800 scientific publications tracking agriculture, livestock production, animal science, animal health and veterinary medicine, and business management and economics).
- Trade magazines (like *Feedstuffs*, *Hogs Today*, *National Hog Farmer*, *Pork*, and *Pig International*).
- Proceedings from meetings, symposia, and congresses (like the American Association of Swine Practitioners, Leman Swine Conference, George A. Young Swine Conference, International Pig Veterinary Society Congress, Iowa State Swine Disease Conference, and many others).
- Consumer and business publications (like *Newsweek*, *Time*, *Wall Street Journal*, *Fortune*, *Forbes*, and local/regional newspapers).
- USDA, agricultural experiment station, and Land-Grant university reports and publications.

Subscribers can search and download abstracts and summaries. Subscribers can also e-mail us and ask us to do the search for them, or to send them full-text copies of articles they are interested in. If we haven't posted an article's summary, subscribers can e-mail, fax or phone us and we will summarize the article, post it online, and send them summaries by e-mail, fax, or mail.

Within the SmartPork knowledgebase, we have an Author's Comments section and a Reader's Comments section. For each article in the knowledgebase, authors will be able to comment on what they published, why, what has changed since the original publication came out, and so on.

Also, for each article readers will be able to make comments on what they have read. There will be one or a few authors' comments but, we hope, many reader comments. We will support your research process by providing hyperlinked references (for articles that have references) along with hyperlinked "related information" jumps to articles within the SmartPork Reference Library.

And we will even provide hyperlinks to articles that have referenced the one you're interested in -- a "referenced by" link. In our Discussion Forums, you can add questions or comments to any number of threaded discussion groups. We will archive all questions and answers.

The What's Coming area lists the major upcoming events for the worldwide pork industry. We've included trade shows, scientific meetings, producer meetings, international congresses and symposia, etc. We also list release dates for important reports (like the USDA reports) and deadlines (like public comment periods for proposed legislation). Along with the listing, you'll find contact information (persons, addresses, phone and fax numbers, e-mail addresses, and, if it exists, links to the event's website).

With thousands of hyperlinks to worldwide sites related to the pork industry, we have taken a very focused approach by categorizing them to make it easier to find exactly what you're looking for without having to jump all over the web. We link to resources within the pork industry and the food industry, online shopping, stock market resources for the food industry, companies and their investment analysis (including stock price charts), news sources, search engines, and more.

We also have the option of doing a Yahoo-type search within our web links to find just what you're looking for.

We are offering a 1-month free trial subscription. We want you to use PorkNet long enough to see whether it has enough value to you that it's worth the subscription price. We offer two subscription types. One is a month-by-month basis, for maximum flexibility. The other is an annual, for best price.

If you want to see additional features or functions, pass those requests on to me at [tomstein@porknet.com](mailto:tomstein@porknet.com). ■

# Grants...

## Grants and Fellowships

- **International Foundation for Ethical Research**

The International Foundation for Ethical Research (IFER) announces a Graduate Fellowship Grant to be awarded in the field of animal welfare science.

IFER is dedicated to developing new technologies and the pursuit of viable scientific investigation towards the creation of a better, more humane world... without use of nonhuman animals. IFER's Graduate Fellowship Grants are intended to inspire, educate, and support these future scientists.

Grants will be awarded for amounts up to \$15,000.00, which will include the cost of supplies.

Briefly, preproposals should:

- Be submitted by a graduate student with an identified faculty sponsor.
- Include a brief description (two typed pages maximum) of the graduate project and how it incorporates the "4 R's" of animal alternatives: Refinement, Reduction, Replacement, and Responsibility.
- Demonstrate current awareness concerning issues in animal welfare.
- Include a specific description of the proposed program (1 typed page maximum) that identifies evidence of the interdisciplinary character of the program, the means for student evaluations, and a plan for the demonstration of findings and gained knowledge during and at the conclusion of the graduate program.

References:

A 2-page curriculum vitae for the principal investigator.

For more specifics on IFER and this Graduate Fellowship Grant, please visit their website at

<http://www.ifer.org> or contact IFER, 53 West Jackson Boulevard, Suite 1552, Chicago, IL 60604, phone: (312) 427-6025.

- **Doerenkamp-Zbinden Foundation**

The foundation has announced the availability of two awards for 1998-1999 for research on alternatives to the use of animals in biomedical research. Each award will total from 25,000 to 50,000 Swiss francs (about \$17,000 to \$34,000). One prize will be given for research demonstrating the possibility of establishing in vitro methods or ethically acceptable human experiments. The second award will be presented for techniques, instruments, or drugs that have produced a clear reduction in suffering in animals used in experiments.

Nominations will be judged by a board consisting of research scientists and lay people. Submissions will be assessed for scientific quality and relevance to animal welfare. Nominations may be made to Prof. H. C. K. Brune, Institute of Experimental and Clinical Pharmacology and Toxicology, University of Erlangen-Nürnberg, Universitätsstr 22, D-91054 Erlangen, Germany, phone: +49 9131 852292, fax: +49 9131 206119, e-mail: [kb@macpost.pharmakologie.uni-erlangen.de](mailto:kb@macpost.pharmakologie.uni-erlangen.de)

- **GrantsNet**

GrantsNet is a web-based tool for finding and exchanging information about Department of Health and Human Services and selected other Federal grant programs. It can be found at <http://www.os.dhhs.gov/progorg/grantsnet/index.html>

- **USDA, Cooperative State Research, Education, and Extension Service (CSREES) Grant and Funding Opportunities**

This section hosts descriptions, guidelines, and deadlines of current funding rounds, as well as abstracts of previously funded projects. In addition, several CSREES programs have funding opportunities that are open to qualifying land-grant university partners. The site can be found at <http://www.reeusda.gov/funding.htm>

- **USDA Nonprofit Gateway**

A variety of funding mechanisms such as loans, grants, and scholarships are available. The site can be found at <http://www.usda.gov/nonprofi.htm>

- **Pet Care Trust**

Among the programs funded by the Pet Care Trust are:

**SPECIAL PROGRAMS** to improve the health and welfare of companion animals through action-oriented or assistance programs with direct benefits to the welfare of companion animals.

**RESEARCH PROGRAMS** to improve the understanding of environmental, humane, social, economic and medical aspects of the health, care, and possession of companion animals.

Please be assured that The Pet Care Trust program funding is being spent to benefit and enhance human-animal interaction and the health and welfare of companion animals.

Programs must be designed to provide outcomes or conclusions which will benefit companion animal health and/or welfare, will engender owner understanding of the care for pets, will create a greater understanding of the benefits of pet ownership and will promote professionalism among members of the companion animal community.

The Pet Care Trust is dedicated to the mission of promoting public understanding of the value and right to enjoy happy and healthy companion animals. In an effort to educate the public and the companion animal community, the result of The Pet Care Trust funded projects and programs will be circulated in the press, in magazines and other media forms.

**The Pet Care Trust (PCT)**

Program Coordinator: John Pitts, DVM  
1220 19th Street, N.W., Suite 400  
Washington, DC 20036  
Tel: (202) 466-5058  
Fax: (202) 293-4377

or

3951 Leland Valley Road West  
Quilcene, WA 98376  
Tel: (360) 765-3311  
Fax: (360) 765-3399 ■

# "Meeting the Information Requirements of the Animal Welfare Act"

The Animal Welfare Information Center (AWIC) of the U.S. Department of Agriculture, National Agricultural Library (NAL) has developed a 2-day workshop for individuals who are responsible for providing information to meet the requirements of the Animal Welfare Act. Representatives from NIH, Office of Protection from Research Risks, and USDA's APHIS, Animal Care will be available for questions and answers. The workshop will be held at NAL in Beltsville, Maryland.

The act requires that investigators provide Institutional Animal Care and Use Committees (IACUC) with documentation demonstrating that a thorough literature search was conducted regarding alternatives. An alternative is any procedure that results in the reduction in the numbers of animals used, refinement of techniques, or replacement of animals.

The objectives of the workshop are to provide:

- an overview of the Animal Welfare Act and the information requirements of the act.
- a review of the alternatives concept.
- a comprehensive introduction to NAL, AWIC, and other organizations.
- instruction on the use of existing information databases/networks.
- online database searching experience.

This workshop is targeted for principal investigators, members of IACUC's, information providers, administrators of animal use programs, and veterinarians. All participants will receive a resource manual.

Dates for the 1999 workshops will soon be announced on the AWIC website at <http://www.nal.usda.gov/awic>

The workshop will be limited to 20 people, so please sign up quickly. There is no fee for the workshop.

For more information, contact AWIC at phone: (301) 504-6212, fax: (301) 504-7125, or e-mail: [awic@nal.usda.gov](mailto:awic@nal.usda.gov), or write to: Animal Welfare Information Center, U.S. Department of Agriculture, National Agricultural Library, 10301 Baltimore Avenue, Beltsville, MD 20705-2351

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